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Transport Subsidies and Competition

THE element of subsidy to air undertakings afforded by their use of airports and possibly other facilities for which they pay charges less than cost, has occasioned a vigorous correspondence in *The Times*, in which Sir Donald Anderson, a former President of the Chamber of Shipping, and Sir William Hildred, Director General of the International Air Transport Association, have both pointed out that subsidies are, and have been, enjoyed by the industry with which the other is concerned. The question is raised not only of aid to the various modes of transport in the form of subsidies, but also of handicaps such as taxation, which some transport operators, notably road hauliers and bus companies, claim as excessive in relation to road construction and other services rendered in return by the Government. Nobody can claim that the railways enjoy any kind of subsidy. The situation rather is the reverse. British Railways, despite the provisions of the Transport Act of 1953 which allow them greater freedom in fixing their charges, still suffer from certain statutory restrictions though, with the amount of competition they have to face, it is doubtful whether complete removal of the remaining restrictions on increasing their charges would do much more than give them complete freedom to price themselves out of the market. Sir John Elliot, writing as President of the Institute of Transport, and with the

authority of a Chairman of London Transport and of a former Chairman of the Railway Executive, earlier this week contributed a statesmanlike letter to the correspondence. Whatever the rights and wrongs of a particular case, he maintains, the trend of transport opinion is set towards each form of transport trying to stand on its own feet; revenue sufficient to meet its own true costs should come only from those who use it. He rightly points out that subsidies create other problems and can even impair efficiency, and subsidies on account of strategic and other national considerations should not be "hidden" but paid for consciously by the community concerned. That is sound doctrine, with which nobody should agree more than those responsible for the management of the railways. It is to be hoped that the transport opinion to which Sir John Elliot refers will be shared by those responsible in the Government. There is scope here for the new Minister of Transport & Civil Aviation, Mr. John Boyd-Carpenter, to assist in translating this opinion into action.

A.S.L.E.F. Intransigence

THE Railway Staff National Council at its meeting last Friday could not agree on the eligibility for discussion by the Council of the pay claim put forward by the Associated Society of Locomotive Engineers & Firemen. This union had insisted that its claim be heard by the Council, as the next step in the negotiating machinery, rather than continue to negotiate direct with the British Transport Commission. The A.S.L.E.F. claim, therefore, was back where it started. The other railway unions, the National Union of Railwaymen and the Transport Salaried Staffs' Association, have made some progress towards coming to an agreement with the Commission, and the prospects of a railway wages settlement would have brightened considerably but for the action of the A.S.L.E.F. A meeting between the Railways Staff Conference, which acts on behalf of the Commission, and the A.S.L.E.F. and the N.U.R. was to be held yesterday (Thursday), in an attempt to reach agreement on the A.S.L.E.F. claim. The next stage in the machinery, in the event of no agreement being reached, would be reference back to the Railway Staff National Council.

Moving Rhodesian Coal

A SPECIAL sitting of the Southern Rhodesia Parliament has been called to sanction emergency measures to enable more general goods traffic to be carried temporarily by road so that the Rhodesia Railways can allocate all available wagons to the more expeditious movement of coal from Wankie Colliery, of which the output is now sufficient to meet all the needs of the Federation of Rhodesia & Nyasaland. The railways are making strenuous efforts to keep pace with the rapidly growing production rate of Wankie, which supplies the coal vital to the copper mines of Northern Rhodesia and the industries of the South. In our last week's issue we recorded the progress of the new works designed to improve the working of coal trains between Wankie and Bulawayo. In seven years the tonnage hauled by Rhodesia Railways has more than doubled. Industries and railwaymen are being urged to hasten the turnaround of wagons, but a restrictive factor is the shortage of railway staff, which, it is hoped, the recruiting campaign now being carried out in Europe, should alleviate. Difficulties in the supply of locomotives and rolling stock on order are another handicap, to which Colonel H. B. Everard, General Manager, Rhodesia Railways, referred in a recent address to the Rhodesian Congress of Commerce.

A South-Western Outlet for Rhodesia

A COMPANY has been formed in London, with the name of South Western Africa Railway Exploration Company, to advance a scheme to build a railway from Matetsi, near Wankie on the northern main line of the Rhodesia Railways, to Tsumeb or Grootfontein in South-

West Africa, whence an existing line of the South African Railways runs to the port of Walvis Bay. Sir Eric Young, Chairman of the company, has discussed the project with the Minister of Transport in South Africa, and the Administrator of South-West Africa, and travelled in the country which the proposed line would traverse. The cost of the line is put at £18,000,000. Its value as a means of developing the mineral resources of Northern Bechuanaland and South-West Africa and providing another outlet for Rhodesian chrome has been stressed by Sir Eric Young. Other schemes for railways from Rhodesia to a port on the Atlantic coast were discussed in an editorial article in our issue of November 13, 1953.

Overseas Railway Traffics

GOLD Coast Railway receipts for June were £304,530, a decrease of £17,295 on the previous year, and for July the total was £269,474, which was £19,633 less than in July last year. The aggregate receipts for the four months from April 1 were £1,241,915, compared with £1,361,606 in 1953-54, a total decrease of £119,691. Midland Railway of Western Australia receipts for railway and road services in June were £A59,300, an increase of £A8,979 over last year, and the July figure also showed an increase, the respective totals being £A55,902 and £A50,564. The financial year ended in June, when the aggregate figure stood at £A726,978, an increase of £A69,781 over 1952-53. Victorian Railways traffics for April last amounted to £2,970,610, compared with £2,577,586 in the previous April. The May figure rose to £3,002,826, against £2,770,199 the year before. The gains were largely from railway traffic, the receipts from road motors and electric street railways varying little from last year. The railway operating revenues of the International Railways of Central America for July were \$942,961, a decrease of \$190,599, on the corresponding month of 1953. The aggregate railway operating revenues from January 1 were \$8,232,579, compared with \$9,310,363 for the same months of 1953.

Swiss Federal Railways Improved Results

EVIDENCE of the improved results now being achieved by the Swiss Federal Railways in the face of road competition is provided by the report for the second quarter of 1954, which contains figures for the first six months of the year. Total receipts in that period from January to June, at fr. 362,532,000, exceeded those of the first half of 1953 by fr. 10,597,000. Passenger receipts increased by fr. 2,987,000, and goods by fr. 6,709,000. The working surplus, despite increased costs of wages and materials, rose by fr. 5,310,000. During the second quarter of the year, passenger transit traffic was high. Trains organised by travel agents accounted for 70 special journeys across Switzerland and a further 120 starting or terminating in, or carrying passengers for, Switzerland. Goods traffic for the half-year rose to 9,698,000 tonnes, an increase of 619,000 tonnes over the corresponding period of 1953. The average number of wagons loaded in a working day rose in the second quarter to 9,557, compared with an average of 9,000 in the second quarter of 1953, largely a reflection of increased industrial production. Electrical power consumed in the second quarter rose to 257,790,000 kWh., against 247,747,000 kWh. in the corresponding quarter of 1953.

New Belgian Electric Train Service

ALTHOUGH electric traction was inaugurated between Brussels, Ghent, Bruges, and Ostend in June, as recorded in our July 9 issue, no alteration was then made in the passenger timetable. The new timings in force from October 17 concern two routes between Brussels and Ghent, the original line through Jette, Denderleeuw, and Alost, and the cut-off opened in the 1930s for the through traffic. As described on another page, hourly expresses at even intervals will run between Brussels Midi and Ostend, calling at Ghent and Bruges, in 75 min. each

way for the 71 miles, of which 5 min. is taken up at the two stops. Trains at present run at irregular intervals, and take 82-91 min., except for the through German diesel-electric train "Saphir" between Ostend and Dortmund which is and will continue to be allowed 63 min. eastbound and 69 min. westbound for the non-stop journey. Before the war, however, an hourly 75-min. service with almost exactly the same point-to-point times, was maintained with steam haulage, and two trains each way, with a Bruges stop only, had a booked start-to-stop average of 74.9 m.p.h. from Brussels to Bruges, the fastest steam-operated run in Europe.

An Underground for Istanbul

ISTANBUL appears likely to join the small but growing number of cities with underground railways. Trial borings have begun for a line linking the quarters of Sisli and Yenikapi, passing under Galata and crossing the Golden Horn on a bridge. A French firm, the Société Générale de Traction et d'Exploitation, the former Paris Metropolitan Railway Company, which is interested in promoting underground railway schemes overseas, is to construct the line, and it is proposed to use rubber-tyre trains, presumably on the system now being experimented with by the Paris Metro. Yenikapi is to be the site of the future main line terminus of the European lines of the Turkish State Railways, and the section of main line running thence along the Bosphorus to the present Sirkeci terminus will be abandoned. At a later stage a second underground line is intended; it would begin at the suburb of Yedikule, on the European side, and describe a wide arc, cutting the first line and then crossing the Bosphorus by bridge to Uskudar (Scutari) and ending at Haydarpasa, the State Railways terminus on the Asiatic side. It may then be possible to travel for the first time by underground railway between two continents.

Bargain Travel in Scotland

ENCOURAGED by the public response to the three-day excursion fares introduced experimentally in June in the North of Scotland, British Railways, Scottish Region, have extended this experiment from today (October 1) to embrace selected stations in other parts of Scotland, besides certain additional stations in the North. It is hoped that public response to the new facilities will justify their continuance on a permanent basis. The tickets will be valid on the outward journey by any train on Fridays after 3 p.m., or by any train on Saturdays, with return by any train on Saturday, Sunday, or Monday. The reductions afforded are considerable. Thus the three-day excursion fare from Glasgow to Aberdeen is 27s. third class, compared with the ordinary return fare of 44s. 8d. The experiment and its extension are an illustration of the latitude in these matters now given to the Regions in accordance with the British Transport Commission policy of decentralisation. The new fares should do much to regain and to create traffic for the railways, which have the advantage over road travel in speed and comfort over the longer distances.

Carriage Lavatories

THE cleanliness of lavatories in British Railways trains has been the subject of letters to the papers; the correspondence seems to have arisen out of a suggestion—quite unproven—that train lavatories are instrumental in spreading poliomyelitis. There has been, as in the past, adverse criticism of the state of lavatories, which are compared unfavourably with those on railways in other parts of the world, notably Scandinavia and the U.S.A. In our experience lavatories in main-line trains on British Railways are clean and well provided with soap and towels—at least at the beginning of the journey. Whether, in these days of manpower shortages and so much corridor stock used on secondary services, the situation on such services is equal to that in main-line trains, is perhaps open to doubt. If the state of lavatories rapidly deter-

riorates en route, this must be attributed to the habits of an unfortunately large section of the travelling public. The same applies to litter in passenger compartments. Whatever economies in manpower are achieved on British Railways, it is imperative that an adequate staff ensures that carriage lavatories are in a satisfactory state. It is largely in providing this amenity that railway travel can compare favourably with road passenger transport.

An Experienced Driver's Failure

THE accident at Windmill Bridge Junction on February 3, 1954, arose from an experienced driver over-running the home signal at speed and entering a facing junction set in accordance with rule for a route he did not require to take, in order to permit a train from that line to cross the junction in the reverse direction. He and his guard declared the distant signal applying to the route they were booked to follow to have been at clear but, despite the fact that a wrong side failure of it was produced in his presence, after the wire had been considerably tightened, Colonel D. McMullen, whose report on the case is summarised in this issue, is satisfied from other and very convincing evidence that all signals were against the train and that the home signal was not seen, or the brakes applied, at the point where the driver said that took place. The distance run by the derailed train, which left the rails at movable diamonds, disproved his assertions. The signalling concerned has since been superseded by colour-light, described in our issue of April 2.

Junction Block Working

JUNCTION block working and interlocking require a route to be set for an unoccupied line, and in such a way as to deflect a train failing to stop out of the path of any other movement, then taking place or signalled, before such train is accepted. Junction block regulations originally were very rigid and did not allow of facing points so set being interfered with after a crossing movement had passed clear until the oncoming train had been stopped, but this of course resulted in a great many unnecessary stops, with consequent delays. A train might still be some distance off when the necessity for the points having to be so set ceased. Relaxations came therefore to be permitted and a signalman allowed to change the junction if satisfied there was no risk in it, as laid down in the regulation quoted by Colonel McMullen, the essential operative words of which are "as far as practicable." The fact is traffic could not be operated in such an area as Croydon without putting such discretion in the signalmen's hands and accepting some measure of risk.

Eastern Railway of India Activities

THE parts of India served by the former East Indian Railway, and more particularly Calcutta and its environs, and the Bengal and Bihar coalfield, have always tended to be those in which the greatest industrial development has taken place. The effect on the railways of the intensive industrialisation now taking place in the Republic of India is illustrated in the developments on the E.I.R. lines east of Moghal Sarai which since 1952 have formed part of the Eastern Railway. These developments are described in a letter from Mr. P. C. Mukerjee, General Manager of the Eastern Railway, read at the East Indian Railway Officers' Dinner last week by Mr. F. G. S. Martin, chairman of the dinner, of which function a short account is given on another page. Because the account was intended for former officers of the E.I.R., Mr. Mukerjee mainly confined himself to the former E.I.R. lines of the Eastern Railway. For that reason he made no detailed mention of the many developments on the former Bengal-Nagpur, which also is part of the Eastern Railway. Much is being done, under the Five-Year Plan, on the other five railways in the Republic of India, but, because of industrialisation of the territory it serves, the Eastern Railway probably is the scene of the greatest activity.

The enormous increase in the population of Calcutta and the development of the suburban area have resulted in a rise in suburban passenger traffic; in the period 1952/53-1953/54 the increase was equivalent to 50 per cent of the total prewar traffic. To deal effectively with this traffic, it has been decided to electrify the suburban sections serving Calcutta and Rs. 118,500,000 has been sanctioned to cover the first phase of the project, which includes electrification of 261 track-miles of the Howrah-Burdwan (via Bandel) section. Electrification of this section has been given priority because, to justify the capital expenditure, it was necessary for the scheme to cover all train services, including goods, and this section provided the maximum overall density of traffic. The project includes remodelling of the Howrah, Lillooah, Sheoraphuli, and Bandel yards, re-spacing of the tracks to permit running of 12-ft. wide multiple-unit stock, and provision of automatic signalling on the Howrah-Bally section to facilitate a three-minute interval service. Work on the overhead equipment is scheduled to commence by December, 1954, and is expected to be completed by about the end of 1956. Substation equipment is expected to be delivered by the middle of 1956, and rolling stock towards the end of that year, with the first train in commission by June, 1957. Electrification will halve running times, and the number of trains will be increased from 31 to 88 each way per day on the Howrah-Burdwan sections.

Further electrification is planned or under examination. A survey is being made of electrification of lines serving the industrial belts in West Bengal and Bihar with a specific reference to the coal, mineral, iron and steel, locomotive and other engineering and fertilizer industries and power plants in these areas. The survey of the Howrah-Moghal Sarai section on the Grand Chord line and the Howrah-Chakradharpur and Sitarampur-Jhajha sections and other lines serving the coalfields has now been completed. The Government of India has accepted the principle of electrification of the lines in these areas in the near future.

Reference to the construction of the (broad-gauge) rail-and-road bridge over the Ganges at Mokameh was made in last week's issue. Work is expected to begin, Mr. Mukerjee states, this month, and completion is planned for 1958. To increase movement capacity from the Calcutta area to destinations reached via Moghal Sarai, additional facilities, including block stations and remodelling of intermediate station yards are being provided on the Barkakana Loop, the Grand Chord, and the main line. At Moghal Sarai yard itself, additional lines are being provided in the reception, marshalling, and departure yards. In the up hump yard, it is proposed to introduce power operation of points to accelerate sorting. When the scheme is completed, the capacity of the yard will increase from 1,500 to 2,000 wagons a day.

Operation of the whole of the Eastern Railway during the four months of the current financial year has been satisfactory; the daily average loading of goods and mineral traffic was 6,914 as against 6,650 wagons during the corresponding period of the previous year, with an overall average of 7,631 wagons maintained during the financial year 1953-54. The improvement in coal loading has been particularly marked; it has been possible to meet demands of the coal trade in the Bengal-Bihar coalfields for all directions, except for those west of Moghal Sarai. During the first half of August, 1954, the daily average coal loading on the former East Indian Railway coalfields has been 2,596 wagons against 2,464 wagons, which is the highest monthly average ever achieved in this region (during August, 1952). Many other operating results show an improvement in 1953-54 over the preceding year. Net ton-miles per wagon-day rose from 417 to 459, and ton-miles per engine-hour from 1,964 to 2,044, and wagon turnaround fell from 8.7 to 8.6 days. Despite a drop in goods tonnage conveyed, from 48,000,000 to 46,000,000, earnings from tonnage originating on the Eastern Railway rose from Rs. 5,563,000 to Rs. 5,907,000.

The Chittaranjan locomotive works, whilst they cater for all the railways in the Republic of India, are situated on

the old E.I.R. Mr. Mukerjee reports that the out-turn has been steadily maintained and by the end of June, 1954, a total of 40 locomotives were turned out, against a target of 32. The works have produced an average of 8 "WG" locomotives a month during the last three months, an average of two a week as against only one per week achieved during 1953. If this production is maintained, they can be said to have achieved the capacity rate of production. The Government of India, seeing the possibilities of this project, is stated to be planning to revise the original targets of 120 locomotives and 50 spare boilers a year to 200 locomotives and 150 spare boilers. Further progress in modernisation and standardisation is shown in the reduction of the number of classes of locomotives in India from 350 in 1946 to 100 in 1954.

Proposed Nigerian Railway Corporation

THE Nigerian Railway Corporation may be established on April 1 next, if necessary legislation is passed in time by the Nigerian Government, whose decision in principle to set up such a corporation was announced by the Minister of Transport in the House of Representatives in Lagos in August, 1952. The Minister said that the Government considered that the railway would be run more efficiently as a corporation than as a Government department, and that it would thereby bring more revenue to the country and also provide opportunities for Nigerians to participate directly in the direction of the railways. It was this policy which led to the establishment of the Nigerian Coal Corporation and the Electricity Corporation of Nigeria.

A working party formed in 1951 came to the conclusion early in its discussions that the financial problems involved in the transfer of the duties and functions of the railway to a public corporation were so complex as to require investigation by consulting accountants. Although the report of the working party, submitted in June, 1952, provided sufficient information to enable the Government to agree to the establishment of a corporation, it was considered desirable to seek the best possible technical advice before introducing legislation. Colonel R. B. Emerson was appointed to undertake this task, and since August, 1953, he has combined the duties of adviser on the Railway Corporation with those of General Manager of the Nigerian Railway.

The proposed corporation is to consist of a Chairman, who is also to be the chief executive, and nine Members, of whom one shall be qualified in industrial relations, one represent commercial interests, three have experience in commerce and the use of railway transport, two represent respectively the Nigerian Ports Authority and the Central Marketing Board, and two others. Members of the Board will hold office for not more than three years but will be eligible for re-appointment; appointments to the Board will be made by the Governor-General in Council. The duties of the Corporation will be identical to all intents and purposes with those of the present railway administrative which it replaces. It will have power to undertake all matters necessary or desirable for running the railway, including the operation of ancillary transport services, and it will have so to conduct these affairs that, taking one year with another, its revenue will be sufficient to meet all charges properly chargeable to revenue.

Apapa Wharf and the large cargo wharf at Port Harcourt, which hitherto have been operated and financed by the Nigerian Railway, will be transferred to the Ports Authority; the coal wharves at Lagos and Port Harcourt will be transferred to the Railway Corporation. The Governor-General in Council will be required to appoint an officer, who will be called the Inspector of Railways, to have full powers of inspection and inquire into and report on serious railway accidents, and sanction the opening of new lines. He must be a civil engineer of at least 15 years' experience on a large railway. As a Government servant he will be independent of the Railway Corporation and will be attached to the appropriate Federal Ministry.

British Transport Commission Traffic Receipts

BRITISH Railways passenger receipts for Period 9, the four weeks ended September 12, fell sharply by £3,406,000 from the Period 8 figure of £13,972,000, and were £67,000 below those for the corresponding period last year. The seasonal fall between the two periods in 1953 was, however, £3,766,000, and, taking into account the effect of the bad weather during the period, the result is probably better than might have been anticipated.

Merchandise and livestock figures improved considerably and are not only £406,000 above those for the corresponding period of last year, but £1,522,000 better than the Period 8 figures. The increase between these periods last year was £1,001,000, so that even though the Period 8 figure this year was a somewhat low one, the present results have more than compensated for that fall. Mineral traffic, which has been showing a falling tendency, recovered to £3,440,000, an increase of £114,000 over the corresponding period of last year and of £670,000 over Period 8. Coal and coke traffics have also made a good recovery, helped no doubt by the seasonal increase, and are £616,000 more than in the same period of last year. The present figure of £8,749,000 is an increase of £2,295,000 over the previous period and compares favourably with an increase of £2,068,000 between the same periods of last year.

Receipts from parcels, and so on, which have been satisfactory for some time, show a tendency to improve and were £3,260,000 in this period. This is an increase of £297,000 over last year and £111,000 over Period 8. The increase between these periods last year was only £7,000. Collection and delivery services have also recovered to some extent.

	Four weeks to September 12		Incr. or decr.	Aggregate for 36 weeks		Incr. or decr.
	1954	1953		1954	1953	
	£000	£000	£000	£000	£000	£000
Passengers—						
British Railways	10,566	10,633	— 67	83,671	82,805	+ 866
London Transport—						
Railways	1,415	1,365	+ 50	12,815	12,410	+ 405
Road services	3,993	4,000	— 7	35,197	34,180	+ 1,017
Provincial and Scottish buses	4,751	4,859	— 108	35,992	35,161	+ 831
Ships	902	873	+ 29	4,546	4,316	+ 230
Total Passengers	21,627	21,730	— 103	172,221	168,872	+ 3,349
Freight, parcels & mails—						
British Railways—						
Merchandise & live- stock	8,235	7,829	+ 406	75,658	73,286	+ 2,372
Minerals	3,440	3,326	+ 114	31,137	30,698	+ 439
Coal & Coke	8,749	8,133	+ 616	78,152	73,557	+ 4,595
Parcels, etc., by pas- senger train	3,260	2,963	+ 297	27,752	26,349	+ 1,403
Total British Railways	23,684	22,251	+ 1,433	212,699	203,890	+ 8,809
British Railways C. & D.	918	877	+ 41	8,378	8,002	+ 376
Others*	5,852	6,472	— 620	55,307	57,392	— 2,085
Total freight, parcels, & mails	30,454	29,600	+ 854	276,384	269,284	+ 7,100
TOTAL	52,081	51,330	+ 751	448,605	438,156	+ 10,449

* Inland waterways, freight haulage, and ships

London Transport railways receipts showed little change from the previous period; at £1,415,000 they were £50,000 more than in the corresponding period of last year. The decrease of £2,000 from Period 8 compares with an increase of £9,000 last year, an insignificant figure compared with total receipts. Road haulage fared less well with a fall of £21,000 from Period 8. Last year there was a gain of £2,000 between the corresponding periods. The receipts of £3,993,000 are £7,000 below those in the corresponding period of last year. This is the first time that road haulage receipts have failed to match those of last year since Period 6, when the influence of Coronation traffic in 1953 probably had considerable effect. As with the railways, the cause may be the recent bad weather; a falling tendency was apparent in the results for Period 8.

Provincial and Scottish buses, at £4,751,000, show receipts £108,000 below those of the corresponding period last year, and £536,000 less than in Period 8. This is rather more than the seasonal fall to be expected, and a division of figures between basic routes and those used by tourists, including hire traffic, might be illuminating both with these and London Transport road services.

Passenger shipping figures, although reflecting the seasonal fall, are £29,000 more than those for the corresponding period last year, and the aggregate for the 36 weeks is now £230,000 more than for the similar period of 1953. Inland waterways, freight haulage, and shipping receipts fell by £620,000 compared with the corresponding period of last year. The decrease in receipts from this source is a large factor in keeping down the aggregate total receipts of the Commission, which now stand at £448,605,000, a figure only £10,449,000 more than for the corresponding period of 1953.

BRITISH TRANSPORT COMMISSION TRAFFIC RECEIPTS
PERCENTAGE VARIATION 1954 COMPARED WITH 1953

	Four weeks to September 12	36 weeks to September 12
British Railways—		
Passengers	+ 0.6	+ 1.0
Parcels	+ 10.0	+ 5.3
Merchandise & livestock	+ 5.1	+ 3.2
Minerals	+ 3.4	+ 1.4
Coal & coke	+ 7.5	+ 6.2
Total	+ 4.1	+ 3.3
C. & D. services	+ 4.6	+ 4.6
Ships (passengers)	+ 3.3	+ 5.3
British Road Services, Inland Waterways and Ships (cargo)		
... ..	- 9.5	- 3.9
Road Passenger Transport, Provincial & Scottish		
... ..	- 2.2	+ 2.3
London Transport—		
Railways	+ 3.6	+ 3.2
Road services	- 0.1	+ 2.9
Total	+ 0.8	+ 3.0
Aggregate	+ 1.4	+ 2.3

Towards Atomic Power

ANY plan for widespread railway electrification today must take a long-term view of sources of power. The economy in high-quality coal that would result from greater use of electric motive power is often quoted, but already it has become wise to look further ahead to a period when it will be necessary to conserve the low-grade fuel burned in thermal power stations. Apart from hydro-electric sources, which are not always available on the scale required, the atomic power plant is the solution of greatest interest at the moment. Schemes have been published for turbo-electric locomotives that would carry their own reactors for steam generation, but the advantages to economic development of electricity widely distributed from central stations are so great that it would be hard to justify the use of individual power units. In various parts of the world the combination of an electrified railway and its power transmission line has stimulated industrial development. In future it is more likely that the transmission system will be established for common use by industry and transport, the railways taking their supplies from convenient points like any other large consumer, and using them at the industrial frequency after transformation of voltage.

It is already possible to foresee the general lines of development of the atomic power station. In the first British plant of this type, to be built at Calder Hall, Cumberland, the link between the reactors and the turbo-alternators will be eight 80-ft. steel towers through which hot gas will be circulated continuously. The gas—carbon dioxide under high pressure—will convey the heat from the reactors to water circulating through tubes inside the towers and so raise steam for the turbines. The complete steam towers are being supplied by Babcock & Wilcox Limited, and the turbo-alternators by C. & A. Parsons Limited, both of whom have adhered in these parts of

the equipment to principles which have proved their efficiency over many years of experience with plant operating on orthodox systems of steam raising. The so-called atomic age will in no way diminish the need for efficient use of power simply because it may become abundant. It is not uncommon to hear the electric locomotive spoken of with a hint of disparagement because it is a converter and not a producer of power. With new methods for centralised power production and wider distribution, the converter of electrical into mechanical power assumes the highest importance, and none of the progress made by the electric traction industry in recent years towards smaller and lighter motors of higher output, and in many other directions, will prove to have been wasted.

Several authoritative statements in recent weeks have given a picture of atomic power development in forthcoming years. Lord Citrine, Chairman of the British Electricity Authority, has estimated that 15–20 years will elapse before atomic power makes a substantial contribution to public electricity supply. At the end of that time, it has been forecast by Sir Christopher Hinton, Managing Director, Industrial Group, Atomic Energy Authority, nuclear reactors in power stations might be saving 20 million tons of coal a year.

The nearer prospects of generating atomic power were outlined recently to the Association of British Chambers of Commerce in Sheffield by Mr. L. Rotherham, Director of Research & Development, Industrial Group, Atomic Energy Authority. He did not expect many developments in the next five or six years, but foresaw an output of electricity from atomic plant at the end of a decade equivalent to that produced today by a million tons of coal. Subsequent expansion, he thought, would be rapid. The years ahead should be a period of planning by the railway industry so that when atomic power is available the decisions as to where and to what extent it is to be used will have been taken already.

Slackening in U.S.A. Economic Activity

DURING the past 12 months sedulous efforts were made at Washington, D.C., to belittle the setback to industrial production in the U.S.A., which became noticeable in September, 1953. It is now apparent that a considerable recession in economic activity is likely to endure throughout 1954. Retail trade remains brisk and much constructional work is in hand, but the output of coal, coke, ore and steel is low and many industries engaged in the manufacture of durable goods are rather slack. Normally production increases by 5 per cent in early autumn, but there has been no such rise this year and railway revenues and traffics are about 13 per cent below the 1953 level.

The Association of American Railroads statement of revenues and expenses for all lines for the six months ended June shows the total operating receipts of all Class 1 lines as \$4,609.3 million against \$5,327.3 million in the first half of 1953—a decrease of \$718 million, or 13.5 per cent. The rate of return on property investment for the 12 months ended June was 3.4 per cent, compared with 4.5 per cent in June, 1953. This leaves the carriers little inducement to proceed with capital improvement schemes and there will be a tendency to defer maintenance. At the middle of July the railways had 1,077,900 employees, 161,500, or 13 per cent, fewer than the number on the payrolls at the same time last year.

The half year's freight revenue of \$4,609 million represented a decrease of 14.4 per cent. July and August were also lean months. For 34 weeks to August 21 wagon loadings were 3,451,600 fewer than in 1953, a drop of 13.7 per cent. The Eastern District was hard hit by the recession in the coal mining and steel industries. The Pennsylvania freight revenue was down 21 per cent for the first half of the year. In the month of May it worked 19 per cent fewer net ton-miles and "net ton-miles per wagon day" were down 20 per cent. The Pennsylvania thereupon cut train miles by 17 per cent, lightened its train load by 3 per cent and increased freight train speed by 8

per cent to 18.5 miles an hour. In the West the experience of the Union Pacific was different. With ton-miles lower by 9 per cent and "net ton-miles per wagon day" down 6 per cent, the Union Pacific added 3 per cent to its train load and ran it at 26.2 miles an hour, 5 per cent above the speed in May, 1953. Its density of traffic was 70 per cent of the Pennsylvania's, so that its powerful diesel and gas-turbine locomotives had scope to make long runs unchecked.

Total passenger revenue for the half-year was \$375 million, a decrease of nearly \$45 million or 10.7 per cent. The rate of decline in passenger bookings was less in the Eastern District than in the Central Western Region. The New Haven lost 2.8 per cent of its 1953 revenue, the New York Central 10 per cent, and the Pennsylvania 11 per cent. In the West the rate of decrease varied from 8 per cent on the Burlington to 14 per cent on the Southern Pacific and Union Pacific and 15 per cent on the Santa Fe. One of the many useful documents prepared annually by the Bureau of Railway Economics, Association of American Railroads, is a statistical summary for the previous 15 years. The 1954 summary, circulated in August, contains an analysis of passenger traffic which brings out the steep decline in all classes of travel after the war. Comparing 1948 with 1953, the total number of passengers fell by 29 per cent from 642,781,000 to 456,817,000, while passenger miles dropped 23 per cent. In every year from 1948 onwards commuters outnumbered ordinary passengers, but in 1953 made 76 million fewer journeys. The number of passengers in coaches decreased by 36 per cent from 283 million to 181 million and the

number carried in parlor or sleeping cars decreased by 27 per cent from 27.5 million to 20 million. The average coach passenger went 105 miles and paid \$2.7; the average first class passenger travelled 396 miles last year and paid \$13.4. The typical commuter's journey was 18 miles at a 36 cents fare, which often did not cover working expenses.

No wonder that the deficit on passenger train services rose from \$560 million in 1948 to \$704 million in 1953 and probably will be larger in 1954! The mounting losses constrained the railways to curtail or abandon many services. Between 1948 and 1953 the length of road open for passenger trains was reduced from 159,750 miles to 128,840—an abandonment of 30,910 miles, nearly one-fifth of the total mileage. In 1953 alone passenger services were withdrawn from over 4,000 miles of road. Over the six years passenger train miles were cut by 18 per cent from 407 million to 333 million. Last year the number of passenger trains passing over the average mile of road was 11.5 in the Eastern District and 5.4 in the Western District. Excluding the locomotive and reckoning passengers at 150 lb. each, the average train weighed 666 tons and ran at 39 miles an hour. The trains of 30 years ago averaged 402 tons in weight, but carried 987 million passengers in 1923, more than twice last year's number. Over these 30 years the average journey on individual railways has lengthened from 39 to 69 miles. It may be that the American railways are drifting rapidly towards a stage when passenger train services will be restricted to the outer-suburban precincts of large cities and to long main-line runs between places producing a substantial amount of business.

LETTERS TO THE EDITOR

(The Editor is not responsible for opinions of correspondents)

Passenger Timetables and Rolling Stock

September 17

SIR,—Mr. F. D. Y. Faulkner, Public Relations & Publicity Officer, Southern Region, states in his letter in your September 3 issue that Polegate is unsuitable for dividing the Eastbourne and Hastings portions of 12-car multiple-unit trains from London; this is quite understandable, especially as it involves an additional stop.

As these trains already stop at Lewes, however, could they not be split there, the first six coaches going to Eastbourne on the present schedule and the rear six direct to Hastings a few minutes later? This would greatly improve the service, and slightly reduce the train mileage of the Hastings portion, and should cause no insuperable difficulties from a duty schedule aspect.

Yours faithfully,

NORMAN MATTHEWS

"Forte," 40, Tideswell Road, Shirley, Croydon

Closing of Branch Lines

September 10

SIR,—I refer to the lack of technical vision which prompted the late Railway Executive to decide to close the railways in the Isle of Wight because in its opinion, they were a financial liability.

It must be appreciated by British Railways, as it was by the railways under private enterprise, that the facilities for handling the reduced out-of-season traffic should be restricted accordingly. The position in the Isle of Wight is comparable with that in County Donegal, where the Joint Committee line was faced, between the wars, with a considerable falling-off in all traffic and a poor road system. Diesel railcar services with their obvious economies promptly were substituted and in a very short while turned an operating loss into a reasonable profit.

This position has been maintained and, as is well known at the present moment, to turn the losses of the Irish

railways to a profit, particularly of Coras Iompair Eireann, extensive use is made of diesel traction. Thus the Belfast-Bangor line of the Ulster Transport Authority is now entirely diesel operated. Dieselisation of the County Donegal was noted and acted on so that the U.T.A. and C.I.E. now are starting to dieselise to make the railways pay. It seems strange that British Railways though paying lip-service to this method of traction, prefer to close branches no matter at what inconvenience to those who use them.

As the result of closings, the west portion of the Isle of Wight now depends solely on road services. The Island roads are not adequate for the vehicles necessary to move the traffic, and when wide buses are used, other traffic is crowded off the roads.

I hope that the British Transport Commission is taking a more progressive attitude than the Railway Executive and will consider re-opening the closed lines with diesel traction, only using steam during peak periods when traffic is too much for the diesel cars.

The much publicised dieselisation programme at present being carried out by British Railways originated from the original Great Western conception of diesel cars on lightly loaded lines in preference to closing the lines down.

Yours faithfully,

R. E. G. WEDDELL

21, Farquhar Road, Edgbaston, Birmingham, 15

[The Isle of Wight has a traffic problem of its own. As our correspondent says, diesel railcars, ample for off-season traffic, would be inundated in the high season. If steam trains are to be brought into use for a few traffic peaks in the year, they must be maintained all the year round. There must also be crews available, and British Railways would have to bear the charges on all this equipment besides that of the diesel railcars. Stations in the Isle of Wight are not, in general, well sited to serve passenger traffic, and it is doubtful whether the lines now closed would pay on even a diesel tramway basis, with signalling and maintenance reduced to the minimum.—ED., R.G.]

THE SCRAP HEAP

By Helicopter—and Train

At 2.24 p.m. I stepped into a Bristol Sycamore helicopter on the South Bank for a flying visit to Filton. . . . At 3.53 we landed near the great hangar at Filton. A car was waiting to take us to the station, where we caught the "Bristolian," the fastest long-distance non-stop train in the country.

It proved equal to the challenge of the helicopter. The flight took 86 min. The "Bristolian" reached London in exactly 100. Time for the whole trip: 225 minutes.—"Peterborough" in "The Daily Telegraph."

Fintona Horse Tram Centenary

This is a very important year in the history of Fintona—the horse tram not long ago celebrated its centenary. When the Londonderry & Enniskillen Railway was extended in January, 1854, from Fintona Junction to Dromore and in August of the same year to Enniskillen, Fintona ceased to be served by steam passenger trains, and the company announced that a horse-drawn vehicle would take over.

The present horse-drawn tram working the G.N.R. (1.) Fintona Junction to Fintona branch passenger service—with first and second class accommodation downstairs, and a long back-to-back seat on the uncovered upper deck for third class passengers—is only the second vehicle to be used on this run

during the whole century; it was built in 1883. In recent years, class distinctions have been abandoned, and there is now only one class on the tram.—From "The Irish Times."

Butchery by Meat Train

A meat train from Birkenhead to Smithfield ran into cows straying on the lines near Haddenham, Bucks, Western Region, during the night. One cow was killed.

Archaeological Find on the E.A.R. & H.

While working on the excavation of a cutting on the Western Uganda extension of the East African Railways, a bulldozer unearthed an urn containing human remains, which is now in the Geological Museum at Entebbe.

The urn was found inverted, some 2 ft. below ground and is of coarse red ware, narrow at the base with a wide neck. When found it was tightly packed with earth and contained a saucer in coarse red ware of coil construction, an incomplete bowl in red and black burnished ware, and parts of three human skeletons.

The age of the remains is still in doubt; but they are of a ritual nature of burial unknown today or in current tradition, and unlike any archaeological discoveries so far made in Uganda. As the line is constructed down the escarpment, more remains may be

uncovered, though bulldozers and scrapers are not the most ideal tools for such work.

Modern School

Dotheboys Hall was perhaps carrying a sound principle to its extreme point, but another Yorkshire establishment, a modern secondary school, has wisely modified Squeers' teaching. The pupils in the highest class are instructed in certain everyday arts whereby they will be the better able to face a puzzling world. . . . They must learn how to read a railway guide. . . . There will be those, no doubt, to whom Bradshaw presents the most delightful and fascinating of all literature. The more fiendish the problem the more they will revel in it and a cross-country journey on a Sunday, from, let us say, a small village in Merioneth to another in Suffolk will be almost perfect bliss. The more changes at the more obscure junctions the better. Yet when we remember how constantly we confuse a.m. with p.m., or after a protracted but in the end triumphant agony find we have been looking at the Sunday trains, we shall rejoice that our school days are over.—From "The Times."

Autumn Leaves

(An unwarranted and unofficial preview of the railway autumn lost property sales.)

Blow on, ye equinoctial gales,
That usher in the autumn sales
Of oddments left along the line
As offerings at Amnesia's shrine.

Picture the blood, the sweat, the tears;
Imagine (close your dainty ears!)
The imprecations harshly hissed
When first Lot 55 was missed!

What fires of indignation glowed,
What inky remonstrations flowed
Until somebody cried "Enough!"
And Lot 15 was written off.

Blest are the folk of absent mind
Who leave such curious things behind;
Endless amusement they afford,
Which ought to be its own reward.

But are these orphan odds and ends
All tokens of amnesiac trends?
If one dug deeper, would one stir
Up something far more sinister?

"'Ere's one wi'out a label on,
"Wot shall we do about 'un, John?"
"Don't worry about that-'un, Joe,
Just bung 'un up to L.P.O."

What shall I go for at the sales?
Why not some rusty bolts and nails?
Interred in my hydrangea bed,
I'm told they'll make 'em all turn red.

Age and infirmity, insist,
Alas, that I should search the list,
Hoping that, haply, I may find
A motor-bathchair left behind.

A. B.

Lavishness in the Golden Age



Photo]

The red leather and gilt free pass for the year 1913 issued to Mr. T. Sampson, Auditor of the 3-ft. gauge Tralee & Dingle Railway

[G. Mahon

OVERSEAS RAILWAY AFFAIRS

(From our correspondents)

SOUTH AFRICA

New Goods Depot at Pietersburg

The traffic passing through Pietersburg in the Northern Transvaal is 70 per cent more than ten years ago. The tonnage handled in 1943-44 was 1,787,712, and in 1953-54, 2,923,867 tons. The town lies on the line running from Pretoria through Zoekmakaar to Beitbridge, on the Southern Rhodesia-Transvaal border.

A new goods depot has been built at a cost of £287,000, and £1,500,000 has been spent on relaying with heavier rails the Pretoria-Pietersburg section to carry more powerful locomotives.

VICTORIA

Locomotive Withdrawals

A start has been made on scrapping the "C" class 2-8-0 locomotives. The class was built at Newport Workshops between 1918 and 1926. All were converted to oil burning after the second world war. More of the "S" class Pacifics have been, or are about to be scrapped. The first of the class to be cut up was No. S301 *Sir Thomas Mitchell*.

Level Crossing Accidents

In June a succession of serious level crossing accidents occurred on the Victorian Railways. On June 14 a Bendigo to Melbourne express collided with a private car on a level crossing two miles west of Sydenham. The train was travelling at about 70 m.p.h. and the force of the impact tore the engine of the car from its body and threw it many feet from the track. The train pulled

up in three-quarters-of-a-mile, when it was found that the motorcar body had become flattened and wrapped round the front of the engine. Both occupants, a man and a woman, were killed.

On June 17 a diesel-hauled freight train collided with a bus full of tourists at a level crossing 150 yd. from Strathmerton Station on the Melbourne side. A woman and a small girl were killed and eight persons injured. The front section of the bus was carried about 30 ft. along the track and the rear section was knocked away from the line.

On June 23 a railcar carrying one passenger came into collision with a private car on a level crossing near Swan Hill on the Murray Valley Highway. Two persons travelling in the motorcar were killed and the third was seriously injured. It was said that the motorcar approached the level crossing at high speed. The railcar struck it on the left rear side and threw it a considerable distance from the track. Another accident at Strathmerton, on June 25, was a glaring example of neglect by a motorist. The driver of a motorcar ran into the middle of a train as it was passing over a level crossing only a quarter-of-a-mile from the level crossing where the accident of June 17 occurred. The driver, who escaped with abrasions and shock, told the police that he did not see the train until he was almost on top of it.

These accidents have led to many suggestions being made in the Press for better level crossing protection. Commercial vehicles are required by law to stop at level crossings, and it is understood that application of this rule to all road vehicles is being considered. Suggestions have also been made that the

approach roads to level crossings should be relaid to an S-formation. It is claimed that not only would this slow up cars but, also that, by approaching the crossing through an S movement, motorists would view the line in both directions.

INDIA

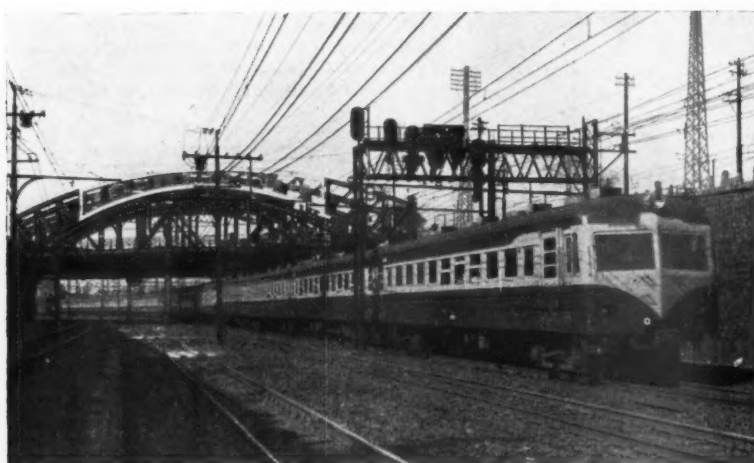
Rajkot Realignment

On July 17, the 4½-mile Rajkot realignment on the Rajkot-Jetalsar section of the Western Railway was declared open by the Maharaja of Bhavnagar. The new alignment replaces two miles of track between Rajkot Junction and Rajkot Town stations which passed through thickly populated areas of the city and included four level crossings, a source of much delay to road traffic. It takes off at a distance of about 1½ miles from the present Rajkot Town Station, on the Jetalsar side, and passes outside the congested area, entering Rajkot Junction yard from the Jamnagar side. There is an intermediate station named Bhaktinagar.

Bodinayakanur Branch

The whole of the Madura-Bodinayakanur metre-gauge branch of the Southern Railway, dismantled during the war, is expected to be opened to traffic shortly. The restoration of this 50-mile line, estimated to cost Rs. 4,300,000 was taken in hand about three years ago. The Madura-Usilampatti section, 23 miles, was completed and opened to traffic in September, 1953. When restored, the new line will provide the Cumbum valley with a direct rail connection not only with Madura, but also with Tuticorin, the nearest port, and it will also link the area with the north via Dindigul.

Multiple-Unit Operation in Japan



A multiple-unit electric train made up to 16 coaches on the outskirts of Tokyo, Japanese National Railways

UNITED STATES

Reopening Abandoned Lines

An unusual use has been made by the Interstate Commerce Commission of its powers in compelling the resumption of service over lines that had been abandoned. In one such case, the Norfolk Southern Railway has been directed to resume service over 6¼ miles of line between Plainview and Ellerbee, North Carolina. The I.C.C. had authorised closure, but had postponed the effective date of its certificate in order to await the hearing before a court of an application by the North Carolina Utilities Commission for an injunction against its closure order, which was obtained.

Another case is on a different footing. The Wichita Falls & Southern Railroad had obtained authority to abandon the whole of its 169-mile line between Wichita Falls and Dublin, Texas. The Chicago, Rock Island & Pacific pro-

posed to work experimentally, for three years, 106 miles of the old route, from Wichita Falls to South Hanlon, but conditions laid down by the I.C.C. were such that the idea was not pursued. Instead, the C.R.I. & P. has now prepared a plan for outright purchase and operation of 39 miles of the old line, between Graham, where it makes connection with the W.F. & S., and South Hanlon, and the I.C.C. accordingly has given the Rock Island operating rights over the section concerned.

ARGENTINA

Reorganisation in Mar del Plata

Railway access to Mar del Plata will be remodelled under the second Five-Year Plan, which includes an appropriation of 80,000,000 pesos for the purpose. A new terminus for rail and road services will be erected in the port zone. The present goods station and locomotive sheds will be removed to a site between Avenida Juan B. Justo and

San Juan Street, thus allowing more space for handling passenger traffic at the North Station, which has only one platform. Eventually all level crossings in the centre of the city will be abolished. Provision is made for the construction at some future date of an underground line between the north and centre of the city with an extension to the new terminal station in the port zone.

FRANCE

Reconstruction of Thionville Bridge

The double-track railway bridge across the Moselle River north of Thionville was destroyed in 1944 and replaced temporarily by a one-track girder bridge, replaced in turn, in 1947, by a Bonnet-Schneider bridge. The S.N.C.F. decided the permanent bridge should be of reinforced concrete and should carry two tracks on two separate decks and consist of five continuous spans.

The first deck of the new bridge is about to be brought into use. Steel

girders 1 m. (39 in.) in depth were first placed, by means of two 45-tonne cranes, on the existing supports, and a reinforced concrete deck was laid on the girders, on the top of which were hooks to hold the concrete in place. The track was laid on the concrete deck. As soon as the new track is brought into use the Bonnet-Schneider bridge will be removed and the second deck constructed.

Valenciennes-Thionville Electrification

A ceremony on August 5 officially inaugurated the first stage of the 25 kV, 50-cycle electrification that eventually will extend from Valenciennes to Thionville and a group of industrial traffic centres further east. The section now converted is from Valenciennes to Mohon, near Mézières-Charleville. Locomotives of three of the designs adopted for this electrification are in service or on trial, namely the first units of the a.c./d.c. converter design (Co-Co), and of the two Bo-Bo classes, one with ignition rectifiers and the other with a.c. commutator motors.

Publications Received

Men of the Footplate. By P. Ransome-Wallis. Hampton Court, Surrey: Ian Allan Limited, Craven House. 9½ in. x 6 in. 96 pp. Illustrated. Price 10s. 6d.—This publication provides an interesting insight into the arduous responsibilities of locomotive drivers and firemen, and the training which ensures their ability to deal with any eventuality. The book is a compilation of the experiences of four top-link drivers, one each from the former L.M.S., L.N.E., Great Western and the Southern Railways, presented in a setting of the railways as they are today. The author has put together the individual experiences of each in such a way as to form most entertaining reading. There are some well-chosen half-tone illustrations.

Dynamic Stresses in Cast Iron Girder Bridges. By G. R. Mitchell. Department of Scientific & Industrial Research. National Building Studies Research Paper No. 19. H.M. Stationery Office, 1954. 9½ in. x 6 in. 50 pp. Illustrated. Price 3s.—This paper is of special significance to railways in view of the number of road overbridges having cast-iron girders. Its importance lies in the fact that the extensive tests described establish new and more accurate methods of calculating live load stresses from static tests. Two series of tests were carried out using different methods of measurement on different bridges and with a variety of test vehicles, including steam rollers, heavy lorries and trailers, a Churchill tank and a Diamond-T transporter. Both series gave similar distributions of the impact factor, and maximum values of about 1.3 in both cases. The observed strain variations in the girders agree with the theory that bounce of the vehicle on its springs is the main

cause of increased stress under dynamic loading. Bouncing occurred even on smooth road surfaces. When the bounce was regular the impact factor was larger and increased with the speed of the vehicle. The methods and apparatus used in the tests are described, and the theory of dynamic stress is discussed, while the theoretical predictions are compared with the test results.

Electrification of the Manchester, Sheffield and Wath Lines. Produced by the Department of the Public Relations & Publicity Officer, London Midland Region. Obtainable from the District Publicity Representative, British Railways, 64, Cardington Street, London, N.W.1. 9 in. x 7½ in. 32 pp. Price 2s. 6d.—This booklet has been issued to commemorate the inauguration by Sir Brian Robertson, Chairman of the British Transport Commission, of the electric working of passenger trains between Manchester and Sheffield on September 14. It tells of the background and progress of the Pennine electrification scheme, of which only a small part is still to be completed. There are some thirty half-tone illustrations, showing features of constructional work, signals, overhead structures, buildings, electrically-hauled trains, and locomotives and their components. A gradient profile of the lines marks signalboxes as well as stations, viaducts and tunnels, and indicates clearly the altered gradients between Woodhead and Dunford Bridge as a consequence of the new tunnel.

Bibliography of Railroad Literature.—The fifth edition of this pamphlet, issued by the Association of American Railroads, Transportation Building, Washington 6, D.C., U.S.A., contains some 315 items, and is available, on request, to librarians, teachers, and others.

There are sections listing juvenile books, general literature, books on model railways, books on railway statistics, railway and travel periodicals, periodicals issued by railway companies, and publishers' addresses. The majority of books included are published in the U.S.A., but a number of Canadian and English publications are also mentioned.

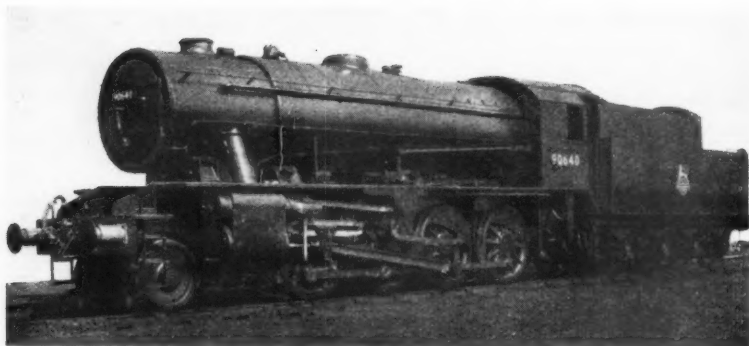
Aluminium Paints.—A series of leaflets relating to aluminium paints, their uses and properties, has been issued recently by the Northern Aluminium Co. Ltd. Details are given of two new grades which have recently been added to the range of Noral Alphase products; the names of all but one of the grades have been changed to make them more concisely descriptive. The new grade, Standard Polished, is an aluminium paste capable of producing a paint of much greater brilliance than the normal Standard grade, while Standard Naphtha, also a new grade, is for use with modern synthetic paint vehicles, not based on white spirit solvents.

Chaseside Dumpers and Shunting Tractors.—The Chaseside Engineering Co. Ltd. has issued two illustrated leaflets giving the salient features of their new design of 3½ cu. yd. dumpers, and shunting tractors. The whole of the power unit and transmission of the dumpers is carried above the chassis, and the final drive from the differential axle to the load carrying axle is by means of heavy-duty driving chains. Alternative engines are available to suit requirements. Principal measurements are illustrated by diagrams. The shunting tractors are fitted with independent steering brakes, enabling the machine to cross railway tracks at an acute angle. Under normal operating conditions the tractor can move 170 tons.

British Railways Freight Locomotive Tests—2*

Comparative performance of W.D.
2-10-0 and 2-8-0 locomotives

By E. C. Poultney, M.I.Loco.E.



British Railways W.D. 2-8-0 type freight locomotive

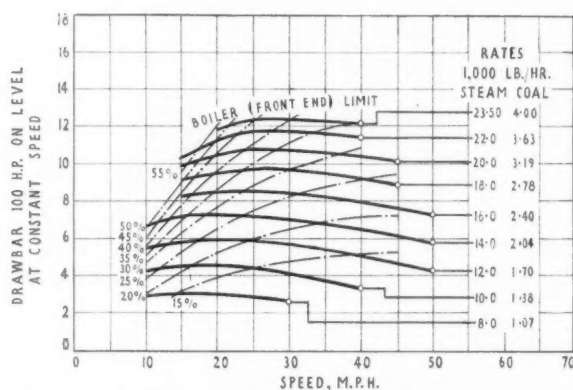
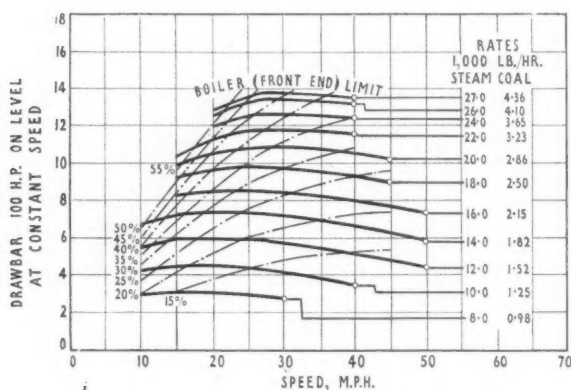
BECAUSE of the larger boiler and the resulting greater rates of steam production, the 2-10-0 showed a wider range of working than the 2-8-0 engine. On the other hand, the fact that the locomotives have identical cylinders and related parts, the water rates for given powers developed in the cylinders were for all practical purposes equal. The 2-8-0 could be operated only over a very limited range when fired

The superiority of the 2-10-0 engine in reduced coal consumptions is due to the fact that for any given evaporation and hence power output, the rate of firing per sq. ft. of grate area per hr. was lower in the case of the 2-10-0 engine with a grate area of 40 sq. ft. than was the case with the 2-8-0 with 28.6 sq. ft. The reason for the differences in the coal rates (Blidworth coal) per i.h.p. hr. will be seen from the following results for

tions is seen to reduce the firing rate per sq. ft. of grate area per hr., thus increasing the water/coal ratio and the boiler efficiency in comparison with the results obtained with a smaller grate area. It is true that at equal rates of evaporation the boiler with the larger grate area shows a higher efficiency, though in fact, when the two boilers are compared, using the same kind of coal and at equal rates of firing per sq. ft. of grate area per hr., the smaller boiler shows a rather higher efficiency, more especially at the lower rates of heat output.

Boiler Performance

In view of the fact that both boilers worked satisfactorily with Blidworth coal, attention may be more particularly directed to their performance when this coal was used. The evaporations attained in relation to firing rates coal lb. per hr. and per sq. ft. of grate area are shown by the plots Figs. 1 and 2, and the comparative evaporations attained with the 2-8-0 and 2-10-0 engines when using Blidworth and Blackwell fuels are well shown by Fig. 3. The relative efficiencies obtained with both boilers



Drawbar characteristics of 2-10-0 locomotive using (left) (Fig. 8) Blidworth and (right) (Fig. 9) Blackwell coal

with Blackwell coal, but when Blidworth coal was used, it was found that the working range was much wider.

Compared with the working range of the larger 2-10-0 locomotive using both Blidworth and Blackwell fuels, the tests showed that an average of 11.5 per cent more Blackwell coal per d.b.h.p. was consumed by the 2-10-0 than when Blidworth was used. Comparing the 2-10-0 and the 2-8-0, both using Blidworth coal, the 2-10-0 showed an economy of 7 per cent, based on power developed at the tender drawbar.

equal powers developed in the locomotive cylinders.

I.H.P. 1,000—Speed 25 M.P.H.

2-10-0

16,000 lb. of steam per hr.
2,150 " " coal per hr.
53.75 " " coal per sq. ft. of grate area per hr.
7.42 water/coal ratio.
75.2 boiler efficiency per cent

2-8-0

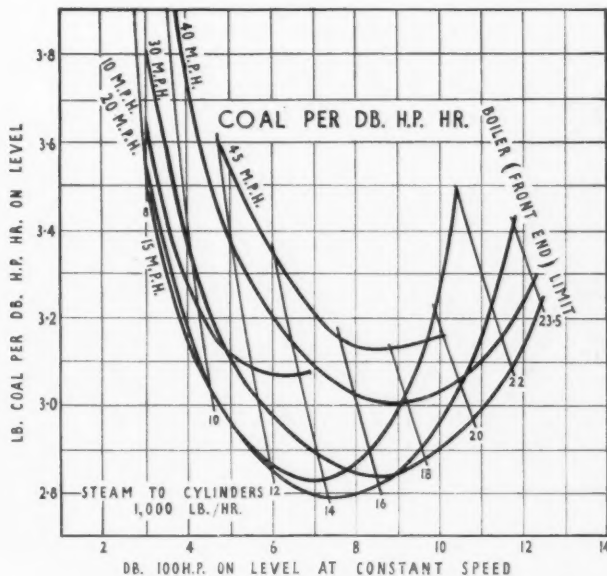
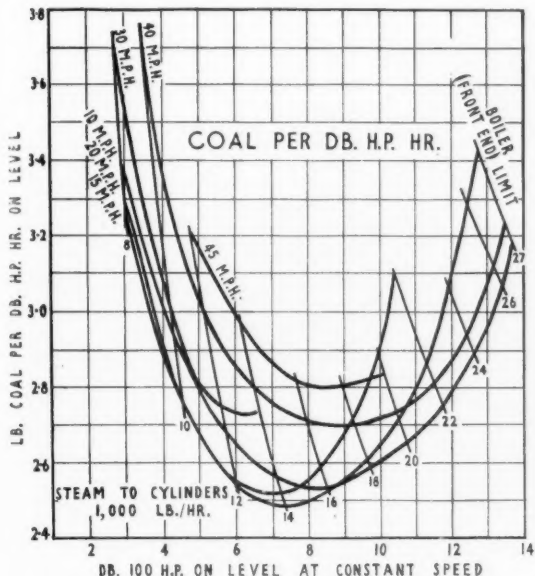
16,000 lb. of steam per hr.
2,330 " " coal per hr.
81.5 " " coal per sq. ft. of grate area per hr.
6.95 water/coal ratio.
71.7 boiler efficiency per cent

The effect of the larger grate on the rate of firing for any given evapora-

when Blidworth coal is fired and based on the firing rates per sq. ft. of grate area per hr. are given by Fig. 4, which includes also the relative water/coal ratios. This diagram has been prepared to take the place of those given in the test report for Blidworth coal, which, as presented, are not readily comparable.

The relative gas temperatures recorded in the smokeboxes and the temperatures of the superheated steam supplied to the engines are given by Figs. 5 and 6. At equal rates of firing coal lb. per sq. ft. of grate area per hr. smokebox gas temperatures are sensibly

* Part 1 appeared in our issue of September 24.



Coal consumption per d.b. h.p.-hr., of 2-10-0 locomotive, using (Fig. 10) Blidworth and (right) (Fig. 11) Blackwell coal

lower in the case of the 2-10-0 locomotive with longer tubes than with the shorter 2-8-0 boiler. At equal firing rates, the temperatures of the superheated steam are higher in the case of the 2-10-0. Compared however on the basis of the steam supply to the engines

The resistance through the two boilers at different rates of steam exhausted through the blast pipes is given by the following tabulation.

Steam exhausted lb. per hr.	Resistance inches of Water.	
	2-10-0	2-8-0
8,000	0.6	0.6
10,000	1	1.15
12,000	1.4	1.75
14,000	1.9	2.25
16,000	2.4	2.9
18,000	3	3.7
20,000	3.55	4.2
22,000	4.2	—
24,000	4.75	—
26,000	5.3	—
27,000	5.6	—

lation to the area of the grate. On the other hand, however, the smaller boiler for a given evaporation required a greater coal consumption, as will be seen if Figs. 1 and 2 are compared. Such being the case, more gas will be liberated in the firebox, though particulars of the products of combustion are not included in the test report.

Engine Performance

Turning now to the engines, Fig. 7 provides a good picture of the performance at speeds varying from 10 to 45 m.p.h., corresponding to crank speeds of 59.5 to 267.7 r.p.m. This plot refers to the 2-10-0 locomotive and Blidworth coal, from which it will be seen that a maximum of 1,590 i.h.p. was developed at 40 m.p.h., 238 r.p.m., when the cut-off was about 37 per cent, and steam supplied to the cylinders at the rate of 27,000 lb. per hr. The steam temperature was 650° F. The coal rate was

lb. per hr., the following tabulation shows that the shorter boiler of the 2-8-0 gives rather higher steam temperatures than in the case of the 2-10-0 type locomotive.

The resistance through the boiler of the 2-8-0 locomotive is seen to be higher for a given rate of evaporation and steam flow through the exhaust nozzle than is the case with the 2-10-0, even though the 2-8-0 has shorter tubes and a larger gas area through the boiler in re-

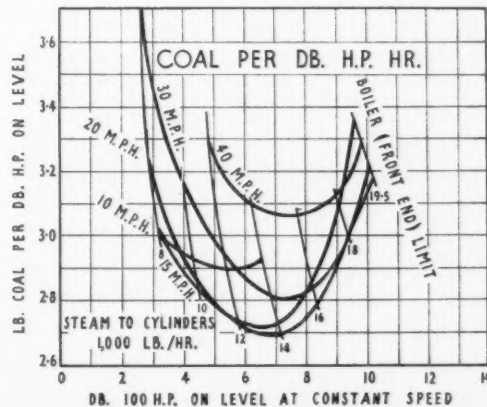
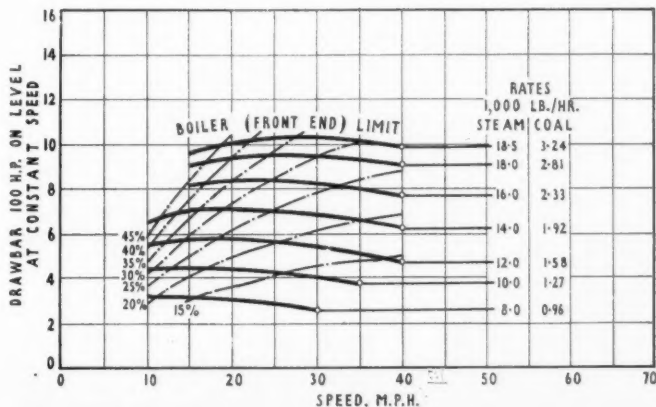


Fig. 12: Drawbar characteristics, and (right) (Fig. 13) coal consumption per d.b. h.p.-hr., of 2-8-0 locomotive, using Blidworth coal in both instances

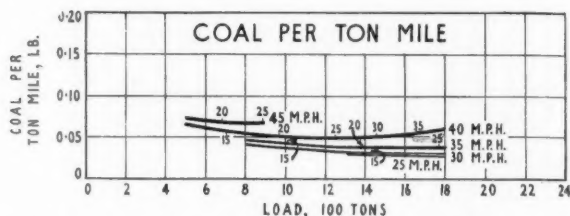
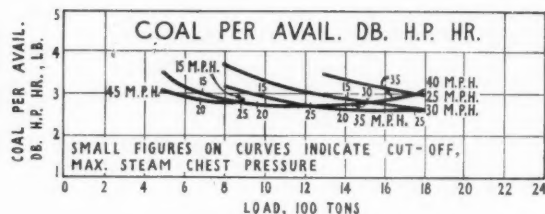


Fig. 14—Relationship of coal consumption to load and speeds with 2-10-0 and Blidworth coal

4,360 lb. per hr., so that the consumptions were 17 and 2.75 lb. of water and coal respectively per i.h.p. hr.

The results obtained with the 2-8-0 locomotive in relation to those given for the 2-10-0 show that the smaller locomotive developed a lower maximum power of 1,250 i.h.p. at a cut-off of about 27 per cent. The steam and coal rates were respectively 19,500 and 3,240 lb. per hr., giving 15.6 and 2.59 lb. of water and coal per i.h.p. hr. In this case the temperature of the superheated steam supplied to the cylinders was about 600° F. The 2-10-0 engine at powers of from

former coal, the maximum power obtained was about 1,380 d.b.h.p. at 30 m.p.h., while with the latter fuel at the same speed about 1,240 d.b.h.p. was developed, this lower power being due to the reduced evaporation obtainable with Blackwell coal.

The 2-8-0 engine attained a maximum of about 1,020 d.b.h.p. at from 25 to 30 m.p.h., the full range of working, when Blidworth coal was used, as will be seen from Fig. 12, and the corresponding coal rates are shown by Fig. 13. The powers developed when using Blackwell coal were very limited and are, for this

using Blackwell coal is compared with the 2-8-0 using Blidworth coal, it is interesting to see that there is little difference between the two locomotives so far as the actual weight of coal required per d.b.h.p. hr. is concerned.

On the other hand, the two fuels have very different heating values. The 2-8-0 uses Blidworth having a calorific value of 12,490 B.Th.U. per lb. "as fired" and the 2-10-0 is using Blackwell coal with a calorific value of 11,800 B.Th.U. "as fired." On the basis of equal coal consumptions by weight per d.b.h.p. hr., the heat units required per horsepower

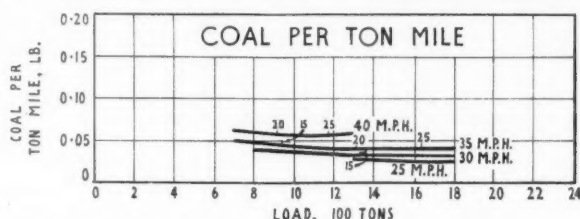
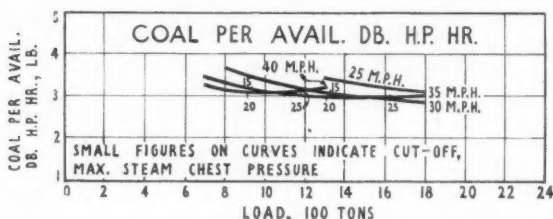


Fig. 15—Relationship of coal consumption to load and speeds with 2-8-0 and Blidworth coal

800 to 1,400 i.h.p. has steam rate of 16 lb. or less, reaching a minimum of about 15.4 lb. per i.h.p. hr., while working at from 1,000 to 1,200 i.h.p. and when the steam rates ranged from about 15,000 to 18,000 lb. per hr. At these powers, the thermal efficiencies were about 12.6 to 12.4 per cent, based on the enthalpy in the cylinder feed above 32° F.

Drawbar Horsepowers

The powers developed at the drawbar in the case of the 2-10-0 locomotive are well shown by Figs. 8 and 9 for Blidworth and Blackwell coal respectively, and the corresponding coal consumptions by Figs. 10 and 11. With the

reason, not referred to in this review. A maximum of only about 650 d.b.h.p. was attained with the 2-8-0 using this coal when a maximum evaporation of 13,000 lb. of water per hr. was attained for a coal rate of 1,870 lb. per hr.

How coal consumptions are related to train loads and average speeds on a level tangent road is shown by Figs. 14 and 15 for the 2-10-0 and 2-8-0 engines when using Blidworth coal. Fig. 16 provides the same information for the 2-10-0 engine only when operating with Blackwell coal. Comparing the two different locomotives when Blidworth coal is used, the economy of the 2-10-0 previously noted is again apparent.

When the performance of the 2-10-0

are of course proportional to the respective heating values of the coal fired; the 2-10-0 locomotive therefore shows an economy of 5.55 per cent in the thermal energy consumption required per horsepower delivered at the drawbar when hauling substantially the same loads at the same speed as the 2-8-0 locomotive. Comparing the performance of these two locomotives, while both would appear satisfactory, the results disclosed underline the advantages offered by a large boiler with ample grate area on the one hand and on the other sufficient adhesive weight for the thermal energy produced to be converted into mechanical work at the tender drawbar.

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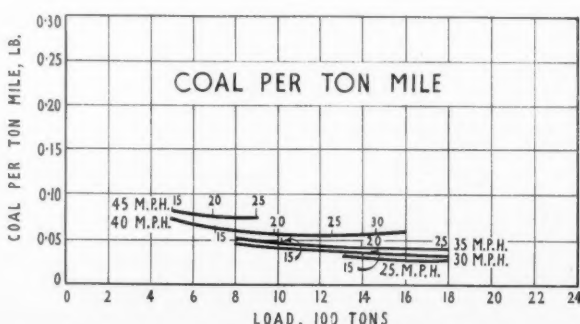
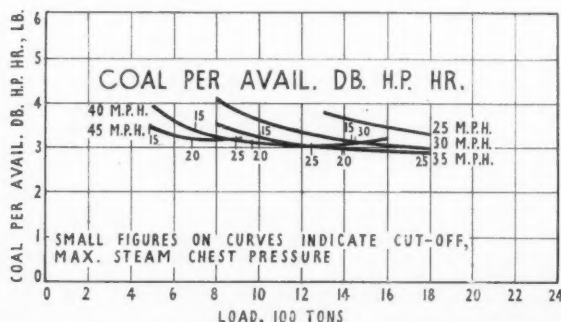


Fig. 16—Relationship of coal consumption to load and speeds with 2-10-0 and Blackwell coal

Multiple-Unit Stock for Paris Suburban Services

*Two-car sets for S.N.C.F.
services from the Gare de Lyon*



Photo]

Train composed of two units of the new stock

[Y. Broncard

WHEN the Paris-Laroche section of the Paris-Lyons electrification was completed in 1950, improvements in suburban services to and from the Gare de Lyon were effected by operating trains consisting of steam-type passenger stock adapted for push-pull working with electric locomotives. Orders had been placed already for motor coach sets, but these did not become available until late 1953, the first two-car set being delivered on November 21, 1953.

The French National Railways have ordered 54 of these sets, each consisting of a 1,500-V d.c. motor coach and trailer. Trains can be made up of two, four, six or eight vehicles. Each two-car unit seats 40 second class and 122 third class passengers, and provides standing room for 18 and 85, respectively, in the two classes. Principal dimensions and other data are tabulated below:—

Total weight of unit	...	93.5 tonnes
Weight of motor coach	...	57 tonnes
Maximum speed	...	74.5 m.p.h.
One-hour rating	...	1,500 h.p.
Continuous rating	...	1,210 h.p.

Stainless Steel Construction

The coach bodies, built by the Etablissements Carel Fouché et Cie., are of stainless steel welded construction on the Budd system, the bodywork being self-supporting. For these parts a steel with 18 per cent nickel and 8 per cent chrome is used. The ends of the underframes, incorporating the headstocks and bogie pivot seatings, are of arc-welded and riveted construction in SCS high-resistance steel.

There is a driving compartment at each end of the set and, in the motor coach, an adjacent luggage space with tip-up seats for passengers. Next to this is a compartment that can be used for postal traffic if necessary. Two toilets

are provided for third class and one for second class passengers.

In each vehicle there are four entrance vestibules with sliding doors arranged for hand opening and automatic closing by compressed air. Glass screens are mounted above the backs of seats adjacent to the entrances. Lighting is by means of a continuous line of fluorescent tubes in the centre of the ceiling, with protective enclosures. The tubes are connected in series for operation on the 1,500-V d.c. supply. Electric heaters of the same voltage are installed under the seats. The vehicles are insulated against external temperature and noise. All main windows are of the balanced half-drop type.

Motor coaches and trailers are car-

ried on four-wheel bogies built by the Société des Forges et Ateliers du Creusot (Schneider), which are basically of the Pennsylvania type with primary suspension by coil springs and equalising beams, and secondary suspension by swing bolster and laminated springs. The side members and central cross member are of cast steel, but the frame ends are welded. The roller-bearing axleboxes are rigidly connected by the equalising beams, but the latter are joined to the bogie frame by horizontal links with Silentbloc bushes at the points of connection, which transmit the tractive forces in the plane of the axles. Lateral control is provided by members forming part of the bogie frame which project downwards outside the axleboxes and have manganese steel plates on the inside facing the axlebox covers.

The air brake has controlled application and release, and incorporates an S.A.B. automatic adjustment which regulates the braking effort according to the load by varying the fulcrum of the rigging. Dellner-Scharfenberg automatic couplers make the mechanical and air-supply connections between units, but the electrical jumpers are fitted by hand.

Electrical Equipment

Each motor coach is powered by four Schneider-Westinghouse motors, rated at 375 h.p. (1-hr.) and 302.5 h.p. (continuous) at 750 V. on 70 per cent field. They are four-pole machines with interpoles, and are self-ventilated with air drawn in through the upper part of the body sides. Weights are 2 tons 2 cwt. for a motor alone and 2 tons 9 cwt. for a motor with gearcase.

In 42 motor coaches the motors are nose-suspended by a system using a



Four-car train, showing motor coach in foreground

Electric Working between Manchester and Sheffield—2*

Replacement of semaphores by three- and four-aspect colour-light signals



Manchester train hauled by Co-Co locomotive No. 27003 approaching new station at Dunford Bridge; new signalbox, Dunford West, on left

BEFORE each stage of electrification could be completed, enginemmen had to undertake a course on driving electric locomotives and motor coaches. Each man was given a booklet on theory, before attending lectures, followed by driving instruction, first with engines running light on unoccupied sidings, then with trains on the main lines, this including tuition in banking technique and regenerative braking. There was a special course in driving multiple-unit trains.

Between 1947 and 1951 the first Bo-Bo locomotive ran about a third of a million miles on the Netherlands Railways. A description of the design appeared in our issue of March 7, 1941. Slight modifications were made as a result of experience with the locomotive lent to the Netherlands. In the standard design the drivers' cabs have been made more roomy. In readiness for full electric working, including express passenger trains, over the Pennines seven Co-Co locomotives, described in our June 11 issue, were also built by British Railways. Fourteen of the fifty-eight Bo + Bo type, as well as all the Co - Co locomotives, are fitted with boilers for passenger train heating. In the Co - Co locomotives there is a basic difference in construction, although the body contains identical equipment. The buffing and draw-gear, instead of being on the outer end of the bogies, has been mounted on

the main understructure, and the bogies are independent except through the connection with the main frames.

Regenerative Braking

Regenerative braking, with which all the locomotives are equipped, has been used for many years abroad, but has not been hitherto a feature of electric railway operation in this country because conditions requiring it have been lacking. Going downhill, with regenerative braking in operation, involves reversal of the usual procedure on the part of goods guards, for to make regeneration fully effective the train must run freely, and handbrakes must be left off. Under normal conditions, current returned to the overhead line by locomotives going downhill will be absorbed by trains taking power, but resistances to deal with any surplus power are provided in the Trafford Crossing, Barnsley Junction, Gorton and Wharcliffe Wood substations.

For the suburban passenger service between Manchester and Hadfield, and on the Glossop branch eight three-car units, of which a description was published in our July 9 issue, have been built, each consisting of a motor, trailer and driving trailer car.

It was intended at first to replace all distant semaphores by colour-light signals, and other fixed signals where likely to be obscured by overhead structures were also to be replaced. Some semaphores would be retained. On the recommendation of the Ministry of

Transport Inspecting Officer, following his inspection of stage one, six such surviving semaphores were replaced, and for the rest of the work, the passenger lines between Sheffield and Manchester, except at the immediate approaches to London Road station, have been equipped exclusively with colour-light signalling.

Track Circuits

Because of the running-rail return of the 1,500-V. d.c. system, existing normal d.c. track circuits would have been rendered useless. Track circuits were accordingly converted to a.c. and furnished with impedance bonds where required. Relay rooms were provided at signal boxes where track circuits were numerous, as on the busy section from Manchester to Newton, signalled on the electro-pneumatic system.

In stages one and three, almost all the new works and alterations have been the responsibility of the Signal & Telecommunications Engineer, Eastern Region, and his colleague and the corresponding department of the London Midland Region have carried out those in stage two. The work has involved, apart from signalling, the removal of existing obstructions to make possible the erection of the overhead structures and wires, and the running of locomotives and motor coaches with full clearance of pantograph.

On the eastern lines, in stages one and three, it has been necessary with



Down directing distant signal at Mitchells Main

* Part 1 appeared in our issue of September 15



Dunford Bridge portal of new Woodhead Tunnel, showing also tunnel lights

certain signal gantries, as with other structures, to make allowance for colliery subsidence. The gantries have been built with telescopic main supports so that clearance may be maintained as and when subsidence takes place. All main line signals have been converted from semaphore to three and four-aspect colour-light signals of the multi-unit type, carried, in some places, in cages suspended from the overhead contact line structures. Distant signals have been re-positioned to give increased braking distance. Current for signals and track circuits is supplied at 415 V., three-phase, 50 cycles from the traction substations at Aldam Junction, Barnsley Junction, Neepsend and Orgreaves. It is transformed to 660 V. single-phase current to the signalboxes and lineside location cases, where it is stepped down to 110 V. To guard against the possibility of complete failure, or a serious fall in voltage and frequency, there is at Aldam Junction a 40-h.p. Ruston & Hornsby diesel engine coupled to a Crompton self-regulating alternator with an output of 25 kVA, 415 V., three-phase, 50 cycles.

Signalling at Wath exchange sidings is controlled from Wath Central box, where the existing 50-lever frame has been replaced by a new 65-lever frame to control added connections, and from Elsecar Junction box, where the existing 64-lever frame, installed for a pneumatic installation in 1907, has been retained. Barnsley Junction box has been extended to take a new 90-lever frame, necessitated by additional locomotive facilities. Engine-changing facilities—steam to electric, and *vice versa*—at Sheffield Victoria, have necessitated the replacement of a 96-lever frame by a

new 110-lever frame at No. 4 box; No. 3, which was on the Wicker Arch bridge and had to be moved to make way for extension of the up goods line, has been replaced by a new box on the opposite side with a 60-lever mechanical frame.

On the western section, power for signalling is taken from the substations at Gorton, Hadfield and Dunford, with a 70-kVA. standby diesel generating set at Gorton. There is continuous track-circuiting from Ardwick to Newton,

"Welwyn" block control exists at other places, and, at some points, mercury treadles are used instead of track circuits to control the block and replace colour-light signals to "danger." New signalling schemes have included new boxes at each end of Woodhead tunnel and enlarged installations at Reddish, in connection with the new locomotive and car sheds, and at the new change-over sidings at Brookfold. Seventeen new relay rooms have been built adjacent to existing signalboxes.

Public crossings needed considerable modification because of the presence of the overhead contact wires and catenaries. Many footbridges have been raised and all live wires and supporting cables made inaccessible to children and irresponsible persons. A number of level crossings has been closed, and where crossings are retained a road loading gauge with bell alarm has been mounted on each side, where required, as a precaution against high-loaded lorries making contact with the overhead conductors.

Problem of Subsidence

The problem of subsidence was far from theoretical only. At Wath, in the early part of 1950, there was a sinkage of more than a foot between Moor Road bridge and the running shed, a distance of 400 ft., and within seven months it had reached 3 ft. 9 in. By the time the subsidence ceased, it had reached a depth of 3 ft. at the east end and 2 ft. 9 in. at the west end of the shed itself. Before the shed was built, it had been anticipated that there might be a sinkage of 5 ft. in this area, and the shed was accordingly constructed with independent engine pits, hinged in short lengths throughout. The building



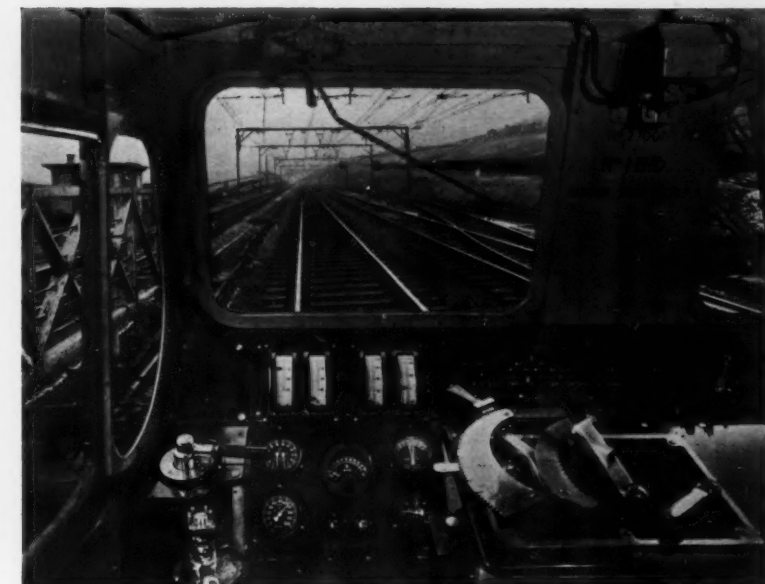
Bo+Bo locomotive No. 26022 on freight train at Torside Crossing

itself was built in the form of a series of braced portal frames, the intermediate frames in pairs double-hinged at each foot and connected to the next pair with side rails having slotted joints, and there were two anchor frames at each end, the whole allowing the building to settle without being distorted. A turntable for steam locomotives was built with a cartwheel shape to the foundations, in pre-stressed concrete with post-tensioned wire.

Experience and Results

Goods and coal trains have now been worked electrically for more than two and a half years, over an exacting line, rising, for much of its length, through barren and exposed country, to a height of 960 ft., and subject to colliery subsidence and bad atmospheric conditions. During one heavy thunderstorm, there were over forty lightning strikes on the supply network, and three locomotives in service were affected. On the other hand, trouble from icing has been slight, and most of the ill effects of wintry weather have been the result of snow packing in points, equally incidental to steam railways.

The times of mineral trains from Wath to Mottram have been reduced from 191 min. to 101 min. and from the Woodburn Junction pass to Mottram yard, from 160 min. to 87 min. Reductions in express goods timings are 86 min. to 72 min. from Sheffield Bridgehouses to Manchester Ducie



Part of the cab of a Co-Co locomotive

Street, and 87 min. to 69 min. from Ardwick East to Sheffield Bridgehouses. The timing of through express passenger trains between Sheffield Victoria and Manchester London Road is 56 min. in either direction, compared with 65 min. with steam traction. There is a five-minute saving on the Manchester,

Glossop suburban train times. The timing for coal empties from Dewsnap yard to Wath has been reduced from 210 min. to 99 min. The full possibilities of this conversion will not be realised until the completion of electric working to Rotherwood next year.

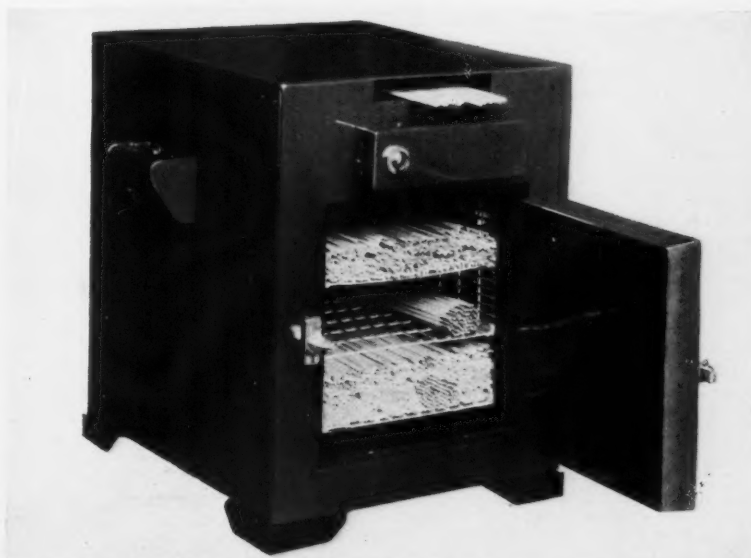
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Electrode Drying Oven

For use with low hydrogen electrodes, and preset to a temperature of 150° C.

A SPECIALLY designed oven for drying low hydrogen electrodes has been developed by the Quasi-Arc Co. Ltd. The maximum capacity of the oven, which is shown in the accompanying illustration, is 230 lb., and particular attention has been paid to producing a portable unit which can be stationed close to the welding operators. The ovens have been designed so that they can be placed one on top of the other, if capacity for a greater quantity of electrodes is required at any one point. The handles are sufficiently robust to allow for the lifting of the ovens by crane.

The temperature range of the oven is 85 to 175° C., and the temperature can be set at any value within this range; the thermostat is preset at 150° C. maximum. This temperature has been established after comprehensive tests carried out by the Research & Development Department of the firm, and which is stated to be adequate to drive off any hygroscopically absorbed moisture, but not so high as to affect combined water, which is necessary in the covering of some types of electrodes.



The Quasi-Arc drying oven, showing the method of drying and storing electrodes for use

Improvements at Harwich Parkeston Quay

*Reconstruction of eastern section of quay;
increased facilities for handling motorcar traffic*



Interior of Customs motorcar examination hall

The whole of the work has been done in sections, so that the normal business of the port could be carried on with the least possible inconvenience and interruption. It speaks well for the organisation behind this big project that this has in great measure been achieved.

In recent years the number of passengers using Parkeston Quay has increased considerably. In 1949, 176,000 passengers left from and 180,000 arrived at the port; in 1953, the numbers of passengers were 243,000 and 240,000 respectively.

Facilities for Motorcar Traffic

Similarly, with motorcar traffic, the numbers have increased. Whilst in 1949, 9,149 cars were carried, in 1953 the number had risen to 12,535 and in order to facilitate the Customs

(Continued on page 385)

TWO years ago British Railways, Eastern Region, began reconstruction work on the old eastern section of Parkeston Quay, Harwich. This portion of the quay was the first to be constructed, in 1881, and is 1,800 ft. long and 100 ft. wide. On this portion British Railways Harwich—Hook of Holland ships, and those of the United Steamship Co. Ltd. on the Harwich—Esbjerg service, normally berth.

The old form of construction consisted of timber decking and bearers carried on steel and wrought-iron joists spanning between the piles. At the water front the structure is carried on a double row of concrete cylinders surmounted by a heavy concrete wall. Behind this are rows of cast-iron screw piles with wrought-iron bracing and the rear 40 ft. is on timber piles. The concrete cylinders and cast-iron piles are in satisfactory condition. The timber piles are generally sound, but a few at the seaward end are being replaced by steel box piles.

The timber deck and wrought-iron joists are being removed and replaced by a new reinforced concrete deck for the front 60 ft. width; and the rear 40 ft. is, wherever possible, being repaired in its present form from recovered serviceable timber. In the new construction sleepered track will be used on a ballast bed and finished to rail level with a macadam surface throughout.

The dolphin at the east end has been replaced with a new one consisting of steel box piles and a concrete cap. A new fender system has been provided, consisting of hanging timber fenders mounted through rubber springs onto reinforced concrete buttresses and walings. This system has been developed to accommodate the needs of ships up to 5,000 tons which use the quay.



New concrete piers in prefabricated sections being placed in position

RAILWAY NEWS SECTION

PERSONAL

Sayed Mabarak Babikr Zarroug, Minister of Communications and Leader of the House of Representatives of the Sudanese Parliament, who, as recorded in our August 27 issue, is visiting Great Britain and Europe on a tour of industrial centres, arrived at London Airport on August 26. The main purpose of the Minister's visit is to make contact with potential suppliers of

Western Germany. He will return to London on October 5. Sayed Zarroug was born in Tokar in 1916, and was educated at the Omdurman Ahliya School, graduating from the Gordon Memorial College in 1934. He served with the Sudan Railways until 1939, entering the School of Law in 1940, and obtaining his diploma in 1943. He became the first Minister of Communications and Leader of the House of Representatives of the Sudanese Government early this year.

services which Mr. Searle has rendered to the Department during the past fifteen years. The Ministry's Transport and Warehousing divisions will be amalgamated under the charge of Mr. C. E. R. Ince, C.B., C.B.E., the present Director of Warehousing Division.

Mr. Charles Thomas Henfrey, A.M.I.C.E., Assistant Chief Engineer, East African Railways & Harbours, who, as recorded in our September 24 issue, has been appointed



Sayed Mabarak Babikr Zarroug
Minister of Communications and Leader
of the House of Representatives, Sudan



Mr. C. T. Henfrey
Appointed Chief Engineer,
East African Railways & Harbours

railway equipment of all types normally required by Sudan Railways for maintenance purposes and more especially in connection with the Sudan Railways Development Programme of the next few years. Sayed Zarroug, who is accompanied by Mr. J. R. Farquharson, C.B.E., General Manager of the Sudan Railways, began his tour by crossing to Belgium and motoring to Brussels, where he met representatives of prominent Belgium railway equipment manufacturing companies. He subsequently went to Paris, where he was a guest of the French Government and was shown working on French Railways. In Holland similar facilities were accorded him by the Netherlands Government. He returned to the United Kingdom on September 8, and has since visited the works of Metropolitan-Cammell Carriage & Wagon Co. Ltd., the English Electric Co. Ltd., United Steel Companies Limited, North British Locomotive Co. Ltd., Colvilles Limited, and Hurst, Nelson & Co. Ltd. On September 24, the Minister left by air for a tour of

Sayed Haj Ali Khreino, General Manager of the Jordan Hedjaz Railway, has arrived in London to discuss projects for extending and modernising the Jordan Railway system. He will be visiting a number of locomotive and carriage and wagon works during his ten days in Britain.

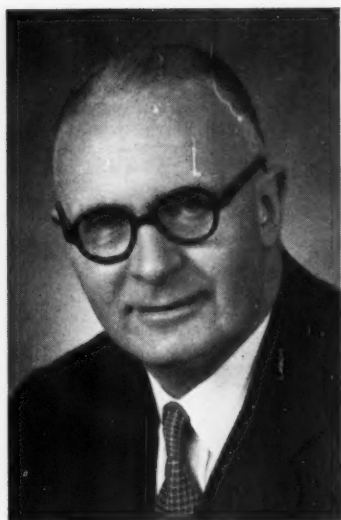
The Peruvian Corporation announces that Brigadier R. Gardiner, the corporation's representative in Peru and Bolivia, has been appointed a Director.

We regret to record the death, at the hands of insurgents in Burma, of Mr. R. W. Cawdeary, Deputy Chief Engineer of the Signals & Telegraph branch of the Burma State Railways.

Mr. G. H. Searle, M.Inst.T., has resigned his appointment as Director of Transport in the Ministry of Food, with effect from September 30, 1954. The Minister has placed on record his appreciation of the

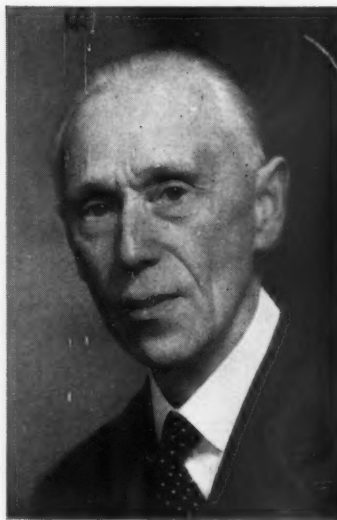
Chief Engineer of that system, entered the service of the Railway Administration in 1935 as an Assistant Engineer, having previously served with the Public Works Department, Kenya, for nine years. From April, 1946, Mr. Henfrey acted as District Engineer, Lake Engineering District. He became District Engineer in January, 1947. Early in 1949, he was promoted to be Acting Senior District Engineer at Railway Headquarters, Nairobi, and, by the end of that year, his rank was substantiated and he assumed the duties of Resident Engineer responsible for the Nairobi-Nakuru realignment. In 1951 he became New Works Engineer, and, in 1952, Way & Works Engineer. In December of the same year, he was appointed Assistant Chief Engineer. His new position dates from September 1, 1954.

Mr. H. S. Tasker has been elected a Fellow of the Institute of Metals, in recognition of his distinguished services to the Institute.



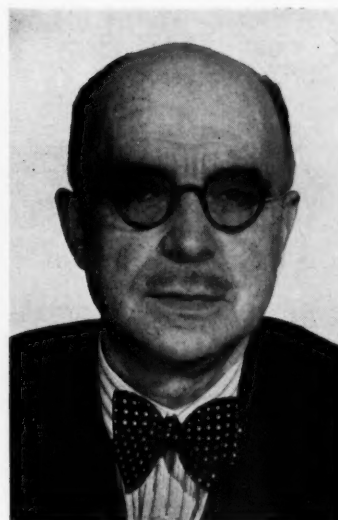
Mr. W. H. Vine

Appointed District Goods Superintendent,
Leeds, North Eastern Region



Mr. T. W. Brown

District Engineer, Aberdeen,
Scottish Region, 1949-54



The late Mr. L. P. Parker

Motive Power Superintendent,
Eastern Region, 1949-53

Mr. William Harold Vine, M.Inst.T., Chief of London Commercial Service (Goods & Parcels), who, as recorded in our September 24 issue, has been appointed District Goods Superintendent, Leeds, North Eastern Region, British Railways, was educated at Watford Grammar School. He began his railway career in the General Manager's Buying Department of the London & North Western Railway at Euston in 1916, subsequently transferring to the Commercial Department. After a period at stations and in the London Midland & Scottish Railway Headquarters rates and development sections, he joined the staff of the Continental Traffic Manager and took part in the institution of container services between this country and the Continent. In 1932 he returned to the Commercial Department in charge of salvage and missing goods, subsequently becoming Chief of the London District Claims Office. After the outbreak of war he was attached to the Vice-President's office for special duties, and, in 1941, was appointed Salvage Officer responsible for measures in connection with the recovery and disposal of scrap and other materials on the London Midland & Scottish Railway. Mr. Vine returned to the London District as Assistant District Goods Manager, Broad Street, and, in July, 1948, he became Chief of the London Commercial Service where he initiated and built up a system of centralised commercial representation with Metropolitan and Greater London, covering all Regions of British Railways. Mr. Vine is the author of several treatises on specialised transport subjects and is a freeman of the City of London.

Mr. T. W. Brown, B.Sc. (Eng.), A.M.I.C.E., F.G.S., District Engineer, Aberdeen, Scottish Region, British Railways, who, as recorded in our September 24 issue, retired on September 1, completed 30 years of railway service. He entered railway employment as a Senior Assistant in the office of the District Engineer, Glasgow, L.N.E.R. In September, 1927, he was transferred to the Headquarters Office in Edinburgh of the Engineer (Scotland) L.N.E.R., where he was engaged in the New Works & Parliamentary Section. Between 1927 and 1937 he was responsible mainly for the design and detail of various bridge, dock, and other

works in steel and reinforced concrete. From 1937 he held the position of Chief Assistant (Construction) until in December, 1940, he was appointed District Engineer, Aberdeen, L.N.E.R., the extent of the District at that date being that of the former Great North of Scotland Railway. Following nationalisation and re-organisation, which resulted in an enlargement of the District, he became District Engineer, Aberdeen, in February, 1949.

We regret to record the death on September 23, in his 66th year, of Mr. L. P. Parker, O.B.E., B.Sc., M.Inst.C.E., M.I.Mech.E., M.I.Loco.E., Motive Power Superintendent, Eastern Region, British Railways, from 1949 to 1953. Mr. Parker, who retired on October 21, 1953, had completed more than 48 years of railway service. He was educated at Bancroft's School and London University and served his apprenticeship at the Stratford Works of the former Great Eastern Railway. During this time, he gained a Whitworth Exhibition and was King's prizeman in applied mathematics and City & Guilds Medallist in electrical engineering. After a period in the Drawing Office and Works Manager's office, he joined the Locomotive Running Department, and, after holding various positions, he was appointed Assistant District Locomotive Superintendent, Norwich. He became District Mechanical Assistant at Norwich following reorganisation, later transferring to the Operating Department as Assistant Divisional Superintendent at Cambridge. He was appointed District Mechanical Engineer, Stratford, in September, 1921, becoming District Locomotive Superintendent, Stratford, after amalgamation in 1923. Mr. Parker was appointed Locomotive Running Superintendent (Eastern Section) in December, 1941, the position being redesignated Motive Power Superintendent in 1948. On the fusion of the former Eastern and Western sections of the Motive Power Department in May, 1949, he became Motive Power Superintendent, Eastern Region.

The funeral, which was held at Chigwell Parish Church on September 27, was attended by approximately 200 persons, among whom were many former railway colleagues. Mr. C. P. Parker, District

Engineer, Darlington, N.E. Region, British Railways, represented family mourners, and others attending included the following:—

British Transport Commission:—

Messrs. R. F. Harvey, Chief Officer (Motive Power); J. A. Broughall, Executive Officer (Electrical Engineering, New Works).

Ministry of Transport & Civil Aviation:—

Mr. C. H. Hewison, Railway Employment Inspector.

Eastern Region:—

Messrs. C. K. Bird, Chief Regional Manager; A. J. White, Assistant Chief Regional Officer; C. S. McLeod, Regional Staff Officer; C. C. G. Dandridge, Commercial Superintendent; L. H. K. Neil, Continental Traffic Manager, E. & N.E. Regions; A. G. Dawson, Treasurer, E. W. Rostern, Operating Superintendent; H. C. Johnson, Divisional Operating Superintendent (W); E. D. Trask, Motive Power Superintendent (also representing F. H. Petty, Motive Power Superintendent, N.E. Region); A. Moss, Signal & Telecommunications Engineer; L. Reeves, Carriage & Wagon Engineer; E. & N.E. Regions; W. McKie, Stores Superintendent, E. & N.E. Regions; W. S. Barnes, Estate & Rating Surveyor, E. & N.E. Regions; J. S. Jones, Assistant Motive Power Superintendent; G. F. Fienes, Assistant Divisional Operating Superintendent (E); G. C. Parslew, J. Blundell, A. R. Ewer, C. N. Morris, R. L. Vereker, G. Ford, H. Bell, R. H. Gomersall, T. C. B. Miller (all District Motive Power Superintendents); J. H. P. Lloyd, Locomotive Works Manager, Stratford (representing K. J. Cook, Mechanical & Electrical Engineer, E. & N.E. Regions); H. C. Orchard, Acting Assistant Engineer (Permanent Way) (representing J. I. Campbell, Civil Engineer).

London Midland Region:—

Messrs. G. Dow, Public Relations & Publicity Officer (also representing J. W. Watkins, Chief Regional Manager); E. H. Baker, Divisional Motive Power Superintendent; W. H. Ensor, Assistant to Motive Power Superintendent (representing S. T. Clayton, Motive Power Superintendent); Colonel Harold Rudgard (retd. Chief Officer (Motive Power)).

Southern Region:—

Messrs. C. P. Hopkins, Chief Regional Manager, A. E. Hoare, Assistant Motive Power Superintendent (representing T. E. Chrimes, Motive Power Superintendent).

Western Region:—

Mr. H. G. Kerry, Assistant Motive Power Superintendent (representing Mr. H. E. A. White, Motive Power Superintendent).

Seventy wreaths and other floral tributes were received.

Mr. E. C. Dewick, F.R.I.C.S., F.A.I., Estate & Rating Surveyor, Scottish Region, British Transport Commission, is retiring on October 10.

Mr. W. C. Wright, Superintendent of the London Midland Region Restaurant Car Services, retired on September 30 after 46 years of service.

Mr. Herbert Bullough, District Commercial Superintendent, Stoke-on-Trent, London Midland Region, British Railways, has been appointed District Commercial Superintendent, Leicester.

Mr. E. W. Collins, Electrical Accountant, London Bridge, Southern Region, British Railways, has been appointed Assistant to Accountant (Civil & S. & T. Engineering), Victoria, with effect from October 1, 1954.

Captain G. S. Sinclair, Assistant to Manager, Clyde Shipping Services, has been redesignated Marine Superintendent, and in this capacity will act as Deputy to the Manager, Clyde Shipping Services.

Mr. Stanley L. Haines, Chief Industrial Engineer of the Ordnance Division of ALCO, has been appointed Director of Industrial Engineering of that company.

Mr. G. G. Buckingham, M.Inst.F., has been appointed Manager of the Manchester office of Babcock & Wilcox Limited, in succession to the late Mr. F. W. Woodfield.

We regret to record the death, on September 23, of Mr. Herbert E. Taylor, Joint Managing Director of Taylor Bros. (Sandiacre) Limited. Mr. Taylor had been actively connected with the company for 56 years.

Mr. G. H. Asbridge, who joined the staff of Sentinel (Shrewsbury) Limited in September, 1953, as Chief Designer, has now been appointed to the board of that company with responsibility for the machine-tool division.

Viscount Chandos, who, as Mr. Lyttleton, was Colonial Secretary until his resignation in July, has been appointed Chairman of Metropolitan-Vickers Electrical Co. Ltd., a major subsidiary of Associated Electrical Industries, of which Lord Chandos resumed the chairmanship last month.

Mr. J. W. C. Milligan has relinquished his position as Managing Director of Brush Electrical Engineering Co. Ltd., a subsidiary company of the Brush Group. Mr. M. Tattersfield, Deputy to Mr. Milligan, becomes Director & General Manager of the company.

We regret to record the death on September 15, at the age of 46, of Mr. H. G. Yates, A.M.I.Mech.E., Senior Designer of the Parsons & Marine Engineering Turbine Research & Development Association. Mr. Yates served as Assistant Engineer in the Turbine Design Department of the English Electric Co. Ltd., at Rugby, from 1934 until 1940.

Mr. W. E. Jones, M.I.E.E., who, from 1952 until early 1954, was a member of the technical staff of the British Electrical & Allied Industries Research Association, and subsequently became Secretary of the Diesel Engine Users Association, has been appointed Assistant Secretary (Education & Technical) at the head office of the Association of Supervising Electrical Engineers.

Mr. W. Leese, General Manager, East Midland Motor Services Limited, has been appointed to succeed Mr. J. Forster as General Manager of the company when Mr. Forster becomes General Manager of the Northern General Transport Co. Ltd. on January 1, 1955. Mr. S. J. B. Skyrme, Chief Engineer, North Western Road Car Co. Ltd., succeeds Mr. Leese as General Manager of East Midland Motor Services Limited.

Mr. S. R. Hogg, formerly Deputy Chairman, has been elected Chairman of the Atlantic Steam Navigation Co. Ltd., which operates the Continental Line-Transport Ferry Service, and also of its subsidiary company, Frank Bustard & Sons Limited. Mr. Hogg succeeds Maj.-General G. S. Szlumper, who recently retired on reaching the age of 70. Mr. Claud Barrington has been elected Deputy Chairman of the two companies, and Mr. David Blee and Mr. H. E. Osborn have joined the board of Frank Bustard & Sons Limited. Both Mr. Blee and Mr. Osborn are Directors of the parent company.

Visit to Europe of Sudanese Minister of Communications

Sayed Mabarak Babikr Zarroug, Minister of Communications and Leader of the House of Representatives of the Sudanese Parliament, is visiting Great Britain and the Continent with the main purpose of contacting the makers of railway equipment of types normally in demand for the Sudan Railways, with special reference to the railway development programme.

He arrived on August 26 in London, where he was concerned with duties in the Sudan Agency and in meeting representatives of Barclays Bank D.C.O. On August 29, accompanied by Mr. J. R. Farquharson, General Manager of the Sudan Railways, he began the first part of his conducted tour by visiting Brussels, where he met representatives of leading Belgian manufacturers of railway equipment.

The tour was then continued to Paris, where Sayed Zarroug and Mr. Farquharson were the guests of the French Government; they were shown much of the working of the French National Railways, and made contact with prominent French commercial interests. The next visit was to Holland as the guests of the Netherlands Government, where similar facilities were accorded to them. The visits to all these countries are stated to have been most valuable and instructive.

The Minister then returned to England and visited, on September 8, the Farnborough air display and during the following days interviewed, at Sudan House, a number of directors and other officials of British manufacturing and shipping interests and was also the guest of the British Transport Commission at luncheon.

British Plants Visited

On September 13 a visit was paid to Metropolitan-Cammell Carriage & Wagon Co. Ltd. works at Saltley, and as the guest of this company Sayed Zarroug visited the

Stratford Memorial Theatre in the evening to see "The Taming of the Shrew." Next day the Preston works of the English Electric Co. Ltd. were visited, to see diesel-electric and other locomotives and equipment under construction. September 15 was spent at the Moss Bay Works of the United Steel Companies, viewing the rolling of rails for the Sudan Railways.

The Minister travelled on September 16 to Glasgow, where he inspected the North British Locomotive Co. Ltd. works, visited the Glasgow Trade Fair, and was the guest of the Glasgow Chamber of Commerce at an official luncheon. He also, as the guest of the Glasgow Port Trust, visited shipyards on the Clyde. Later, Sayed Zarroug and Mr. Farquharson toured some districts of Scotland and visited Edinburgh. Visits were paid to the steelworks of Colvilles Limited and to the works of Hurst, Nelson & Co. Ltd. at Motherwell before returning to London.

Tour of Western Germany

After another short period in London, Sayed Zarroug on September 24 left for Western Germany. Arrangements for this tour include visits to the Stahlunion at Düsseldorf, to the Western German Government at Bonn, to Ferrostaal A.G. and Fried. Krupp A.G. at Essen, to Henschel & Sohn G.m.b.H. at Kassel, and to Maschinenfabrik Augsburg-Nürnberg A.G. at Nuremberg; and various other minor appointments.

The Minister returns to London on October 5. He meets British Ministers on October 6, and on the evening of that day attends a reception at Sudan House.

On October 8 he leaves by air for Zurich and thence to the Sudan.

SURPLUS ON NEW SOUTH WALES RAILWAYS.—The Premier of New South Wales said in his budget speech that the railways were budgeting for a surplus of £5,000 compared with an actual surplus last financial year of £154,000. The improved financial state of the railways, stated the Premier, was largely brought about by increased freight, careful oversight, and control of expenditure.

Improvements at Harwich Parkeston Quay

(Concluded from page 382)

examination and clearance of motor cars at Parkeston Quay, a new car examination shed has been completed by the Eastern Region. A new garage also has been erected.

The site which was chosen for the examination shed is adjacent to the level crossing at the road entrance to the quay and the new garage has been erected to the south of that site.

With these new facilities, it is now possible to deal with six cars simultaneously in the shed, which is 120 ft. long and 47 ft. wide. In addition, office accommodation has been provided for Customs and immigration officials and Automobile Association and Royal Automobile Club port officers. New lavatories and a car-inspection pit have been built.

The new garage is 125 ft. long and 40 ft. wide, with an office for the attendant.

Ministry of Transport Accident Report

Windmill Bridge Junction, February 13, 1954: British Railways, Southern Region

Colonel D. McMullen, Inspecting Officer of Railways, Ministry of Transport and Civil Aviation, inquired into the accident which occurred at 9.33 a.m. on February 13, 1954, at Windmill Bridge Junction, East Croydon, when the 8.9 a.m. electric passenger train, Littlehampton to London Bridge, consisting of six screw-coupled coaches—the front and rear ones motored—and travelling at about 40 m.p.h., ran past a home signal at danger and became almost completely derailed on a movable diamond crossing, blocking all four main lines at the junction. Of about 100 passengers four later complained of shock. No coach was seriously damaged. Traffic continued to run on the local and relief lines and the down main from London Bridge was re-opened at 4.35 p.m., but the up and down Victoria main lines and up main to London Bridge were not restored until 6 a.m. on February 15, after the considerable damage to permanent way

compels their movements and the block signalling operations to be made in the correct order. All semaphore signals were well sited.

The following block regulation had an important bearing on the case:—

"When a signalman at a junction or other diverting point is not in a position to set up the route required for a train until the train is closely approaching the stop signals at such diverting points, he must, as far as practicable, before he sets the points and lowers the signal for the required route, satisfy himself that, having regard to the position and speed of the train, it is safe for him to do so."

Course of Events: Evidence

There were two signalmen at the up and down ends of the frame. The former said he dealt with the 8.43 a.m. Brighton to London Bridge train and, replacing his signal levers, saw that the distant signal

tell the train's speed when he first saw it: it was coming straight towards him. He assumed it was going to stop and did not wait to see it to be slowing down before moving the points. There had been no question of allowing this train to take precedence over the one for Portsmouth. The latter was on time and former about 5 min. ahead of time. A train had been accepted on the up local line but no signals cleared for it. The guard of the derailed train came to the box and said the up main distant had been at clear but the signalman replied that it had not.

The down end signalman had worked the box alone from 6 a.m. until the other came on duty at 8. Neither had adjusted any signal wires and the lineman had not been into the box. The up main distants had been cleared for a number of trains and were in order and their repeaters showed them to be returning to caution correctly. It was impracticable to apply

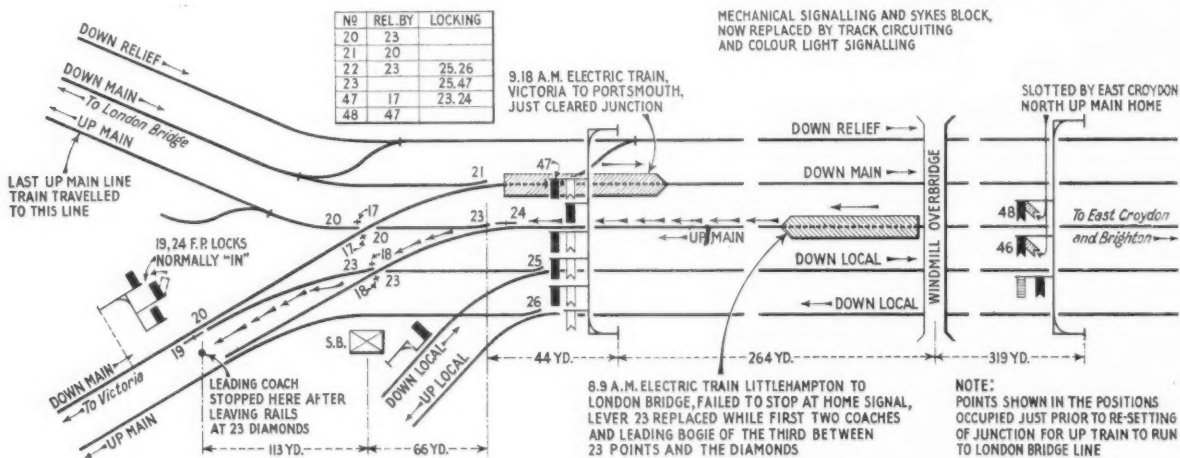


Diagram showing circumstances of accident at Windmill Bridge Junction, British Railways, Southern Region, February 13, 1954

and signal equipment had been repaired. It was raining, but visibility was fairly good.

Signalling Arrangements

The area concerned is now track circuited throughout and equipped with multiple-aspect colour light signalling controlled from a new power signal box, as described in *The Railway Gazette* for April 2, 1954, page 380, but at the time of the accident the signalling was mechanical, operated in conjunction with Sykes' lock-and-block from Windmill Bridge Junction box. The accompanying diagram shows the lines, etc., with points and signals in the condition they were in just after the down train mentioned hereafter had passed clear of the trailing points, and immediately before the signalman began to reset the junction to enable the up train which became derailed to travel towards London Bridge. Certain particulars covering the mechanical interlocking, etc., are given also, to assist in following the course of events.

The Sykes apparatus, if operated normally, without recourse to the releasing key, ensures that signal levers are properly returned to normal behind each train and

repeater showed "on" and the home signal was in that condition. The other signalman then reversed the junction for the 9.18 down train, Victoria to Portsmouth, brought nearly to a stand at No. 10 signal. The train which became derailed was then seen approaching, as the Portsmouth train was moving across.

As soon as the latter had cleared points 21 and signal 10 had been replaced to danger the up end signalman, who had already withdrawn the f.p. plungers 17 and 19, put 21 and 20 levers normal and, as he said, thought he was about to put back lever 23 when he noticed the train passing and still travelling "pretty fast." He could do nothing. He could not remember operating lever 23 but must have done so while the leading two coaches and front bogie of the third were between the facing points and movable diamonds because they became derailed at the latter but the rest of the train at the points, the switch rails of which were bruised. The diamond crossing was smashed.

After the accident both signalmen noticed the up home signals to be at danger and it was confirmed that the distant repeaters indicated "on."

The up end signalman said he could not

the block regulation quoted on the up main, this man said. The electric trains stopped so quickly it would be necessary to wait too long to ensure they were under control.

The up end signalman at East Croydon North saw the up main distants ahead of his box to be at caution after the last train had gone forward. They were invariably replaced by the slotting from his own up main home. He saw the train from Littlehampton running through at "normal express speed"—50 to 60 m.p.h.—and said it did not appear to be slowing down as it approached and passed the distant signals. He remarked to the other signalman—who also saw them to be at caution—that it looked as if the train was not going to stop at the home signal ahead.

The driver of this train knew the road well. He said they had a good run from Hove with slight signal check at Purley. Coasting through East Croydon he saw the distant signal beyond to be at clear when half-way along the platform. After passing under Windmill Bridge at about 45 m.p.h. he saw the home signal was at danger, at about 100 yd., applied the brakes fully, released the deadman's handle and whistled. He felt the brakes

grip, but they appeared not to stop the train quickly, possibly on account of the wet rails. He realised they were derailed just as they "got by the signal" and then found he was going towards Victoria.

Questioned closely about signals he was insistent that the distant was at clear and he braked some distance from the home. (The train actually travelled 223 yd. beyond the latter.) The brakes worked correctly during the journey. He could not remember when he last looked at the gauge but had seen train pipe pressure indicated as 70 lb. and main reservoir as 90. He went to the signal box but did not speak to the men. Leaving it he told his guard the distant was at clear, which the guard confirmed.

The guard also knew the road well. He thought speed through East Croydon was about 35 to 40 m.p.h., normal for that train. Watching through his periscope he saw all signals, with Windmill Bridge Junction distant, to be at clear and took up his journal to book timings. He felt the train become derailed and knew the whole of it had passed the home signal, which he had not seen. He was very definite that he felt no earlier emergency braking. He told one of the signalmen the distant was off, but was informed he was wrong. Pressed on the point he was sure that signal was off, but admitted he might have been mistaken. The area inspector found the up signals at danger and the distant repeaters showing "on." No defect was found in the brakes or signalling equipment. The up main distant 48 and its repeater were found in good order and the wire correctly adjusted.

Tests

Colonel McMullen witnessed a series of tests on February 23 and found distant No. 48 did not return to caution when its lever was returned to normal. A very careful investigation was made into the defect. It was found that the wire was abnormally tight and the arm jamming. The wire was much tighter than it was found to be after the accident. Colonel McMullen noticed it had been tightened whilst he was in the box to ensure that the signal came well off, but when it was readjusted to normal tension the signal worked correctly.

Inspecting Officer's Conclusions

Colonel McMullen has no doubt that the home signal was passed at speed after the distant had been passed at caution. The latter could not have been seen at clear for the previous train, while the apparatus ensured the replacement of the levers concerned. The distant should therefore have returned to caution. He is satisfied also that the junction signalmen did not change their minds as to precedence of trains. Tests taken showed that in that case the driver could not have seen the distant at clear unless travelling very much more slowly than all the evidence suggested. The distance travelled after derailment indicates a speed then of about 40 m.p.h. Alteration in precedence would have necessitated use of the Sykes release key and cancellation of "line clear" signals. There was no evidence of such in any block register.

The distant signal could only have been seen off if it had stuck in that condition, as in the tests conducted for Colonel McMullen. If he thought that at all possible he would give the driver the benefit of the doubt but he does not. During the tests the arm remained off when its lever was replaced but returned to caution correctly under the slotting control of the East Croydon home signal, while tension

in the wire was much greater than found after the accident. Moreover the signalman there saw the signal at caution and commented that he thought the train would not stop at the home signal in advance.

Despite the driver's insistence therefore, Colonel McMullen cannot accept his statement on this nor believe that he saw the home signal at 100 yd. and made an immediate brake application which the guard must have noticed. In fact he noticed nothing until his brake compartment had passed the home signal. It seems likely the driver missed both signals and did not realise anything was wrong until the train started to run towards Victoria, or possibly until it first came off the lines. Colonel McMullen cannot account for his regrettable lapse. He is 52 and entered railway service at 17, became a driver in 1945 and was passed to act as motorman in 1949. He was in good health.

The guard must accept some share of responsibility. Rule 148 (a) requires guards to watch the running carefully when approaching important junctions, and "take any action that may be neces-

sary; also keep a good lookout when leaving stations and, as far as practicable, on other parts of the journey." If this guard had seen the junction home signal he could have applied the brake and probably stopped the train before derailment could happen. Colonel McMullen thinks it doubtful whether he did see the distant.

He does not consider the up end signalman to have been at fault. The block regulations say the signalman shall, *as far as practicable*, satisfy himself that an approaching train is under control. At such an exceptionally busy box this would not be practicable for an up electric train; it would be necessary to wait until it had practically stopped at the signal.

Remarks

This was an accident which should have been prevented by A.T.C. of the warning type. All arrangements had been made for installing colour-light signalling, a change now effected. Such cannot be regarded, however, as a substitute for A.T.C. but it is a great improvement on semaphores, making accidents of this type less likely.

East Indian Railway Annual Dinner

Major developments on the section of the E.I.R. now part of the Eastern Railway

The 51st annual dinner of the East Indian Railway Officers' Association was held in the Connaught Rooms, London, W.C.2, on September 22. The chair was taken by Mr. F. G. S. Martin, a former Controller of Stores of the E.I.R. and now Technical Adviser to Tata Limited.

Mr. Martin, after the loyal toast, proposed that of the East Indian Railway. At last year's dinner, he pointed out, the principal theme of the speakers had been the old days of the E.I.R., as had been appropriate in the Indian railway centenary year. This year he would speak of the important new works in progress.

He had asked Mr. P. C. Mukerjee, the General Manager of the Eastern Railway, to send some information on the important developments now in progress.

Mr. Martin then read a covering letter from Mr. Mukerjee, in which he regretted his inability to be present at the dinner, wished success to it, and asked to be remembered to his old friends. The letter explained that the information supplied on developments on the Eastern Railway applied only to that part of it which had formed part of the E.I.R. No mention had been made of the steelworks at Rourkela, hydro-electric projects at Hirakud or Machkund, and other developments on the former Bengal Nagpur Railway, which also formed part of the present Eastern Railway. The account sent by Mr. Mukerjee, which is the subject of an editorial article on page 367, was then read by Mr. Martin.

Mr. J. A. Bell, a former General Manager of the E.I.R., proposed the health of the guests, among whom he welcomed Sir Frederick James, their guest of honour. He went on to thank Mr. R. C. Harvey, Honorary Secretary, for his efficiency and for the hard work he had put in in organising the dinner. Commenting on the account of current developments on the Eastern Railways, given by Mr. Martin in his speech, and on the financial outlay that this represented, he pointed out that this was in contrast to

the past, when it had often been very difficult to obtain Government authority for expenditure on the E.I.R.

Past Achievements of Indian Railways

Sir Frederick James, replying for the guests, related some of his happier memories of travel on Indian railways. The past achievements of the East Indian and other railways, he added, were a sure foundation on which the prosperity of India was being built up. He proposed the toast of the pioneers of the past and the planners and executants of the future in the great adventure on which India had embarked: "The officers of the East Indian Railway, past and present."

The names were announced of the following who had died since the last dinner was held: G. R. Bosu, F. H. Budden, G. R. Dain, A. H. Johnstone, and R. F. Woods. Besides those mentioned above as being present, the following accepted invitations:—

Members: Messrs. A. Ahmad, H. J. Allinson, C. L. Bazely, C. A. Beard, C. S. Buicke, C. N. Burns, M.B.E., S. P. J. Cambridge, O.B.E., D. D. Cruickshank, G. M. Daniell,

R. J. Earle, J. Fenton, M.B.E., E. R. Fleeton, J. C. Gibson, C. F. Gilbert, P. Hackforth, Sir Hugh Hannay, Messrs. G. R. Hemsley, G. J. Hewitt, H. Howe, D. H. Hughes,

J. B. Kirner, J. C. Lamb, T. T. Lambe, Sir Robert Marriott, Messrs. E. Massingham, O.B.E., T. S. R. Mills, G. H. Montgomery, D. H. Murray, A. J. Norman,

Captain E. M. Padwick, R.E., Messrs. J. F. Pegg, E. M. Purcell, H. W. Puttick, G. W. N. Rose,

R. Saunders-Jacobs, B. G. Smith, O.B.E., A. Stavridi, M.B.E., C. B. Tilbury, O. Tucker, O.B.E., L. D. J. Turnbull, M.B.E.,

A. V. Venables, M.C., H. C. Wallace, E. C. Watson, R. M. Watson, G. W. Watkins, G. Waugh

Guests: Messrs. R. G. da Costa, P. H. S. Drew, A. Gemmell, Mr. Justice Madeley, Messrs. J. A. Powell, W. O'Rourke, N. D. Watson,

Containers for Baby Carriages

As a result of co-operation between British Railways and W. Wilson & Sons Ltd., manufacturers of Silver Cross baby carriages, a specially-adapted container has been brought into use exclusively for moving the firm's products from the factory at Guiseley, North Eastern Region, to customers in Northern Ireland, Aberdeen, and on the Continent. Fully loaded, the container holds 24 large or 42 toy baby carriages, or 84 push chairs.

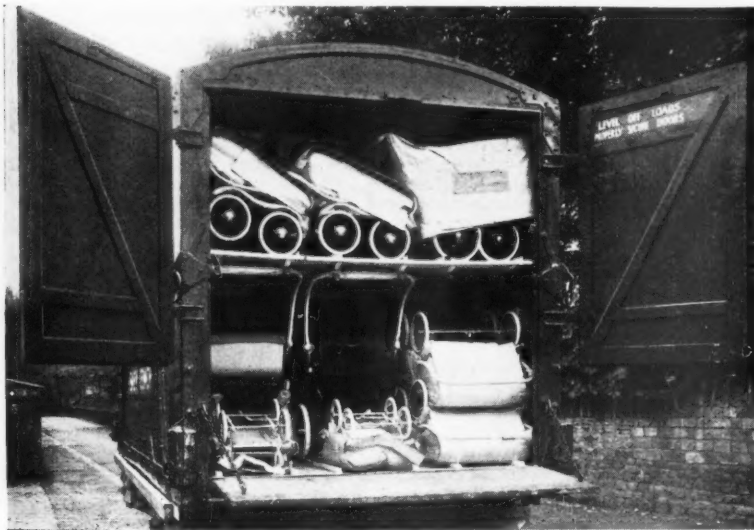
The initial trips of the special container

total 70 min., 3 min. being allowed at the Ghent stop and 2 min. for that at Bruges.

In the reverse direction the trains leave Ostend at 10 min. to the hour, and the point-to-point times are the same as those in the reverse direction: the eastbound service begins at 7.50 a.m. and continues until 8.50 p.m. Additional trains run in both directions on Saturdays and Sundays at times of the greatest pressure.

Additional Interval Services

Stopping trains run at 2-hr. intervals between Bruges and Ghent, and, by the old



Special container, showing method of stowage

proved so successful in ensuring prompt delivery of baby carriages in good condition that two further containers were fitted up and put into immediate service for the firm's exclusive use. They are kept fully employed, and between them the three containers on circuit during the first six months of this year have made 16 journeys to Belfast, one to Aberdeen, 15 to Antwerp, one to Copenhagen and two to Paris.

In this highly-competitive field, point-to-point conveyance in special containers is reported to be of great help in building up overseas markets for the product.

Brussels-Ostend Winter Timetable

The Belgian National Railways' winter timetable incorporates, from October 17, a completely recast timetable between Brussels and Ostend via Ghent and Bruges, on which section electric traction was inaugurated at the end of June, but without modification of the summer timetable then already in force.

Between Brussels Midi and Ostend, 71 miles, an hourly service of 75-min. trains is being introduced, leaving Brussels Nord at even intervals from 6.46 a.m. to 9.46 p.m. over the Brussels Junction line, calling at Central 5 min. later and leaving Brussels Midi at the even hours. The point-to-point times from there are 31 min. for the 32.5 miles to Ghent, 24 min. for the 24.9 miles from Ghent to Bruges, and 15 min. for the 13.6 miles from Bruges to Ostend Quay. The running times thus

route, at 60 min. intervals between Ghent, Alost, Denderleeuw, and Brussels, supplemented by hourly express trains between Alost and Brussels, most of them non-stop between Denderleeuw and Brussels.

International Expresses

Additional service between Brussels and Ostend is provided by the "Tauern Express," the "Ostend-Vienna Express," and the German streamline diesel-electric "Saphir" (Ostend - Cologne - Dortmund). The last-mentioned is the only non-stop train in each direction over the route, and is allowed 63 min. for the 71 miles from Ostend to Brussels, and 69 min. in the reverse direction. Up to the bringing into operation of the electric service, apart from the "Saphir," the trains from Brussels to Ostend and vice versa have run at irregular intervals, and the fastest of them took 82-84 min., though many took up to 91 min., against the new standard 75 min.

Fast Prewar Steam Services

Before the war, however, a regular interval service was steam trains in 75 min. each way, and in addition there were two expresses daily in each direction allowed 60 min. for the 71 miles. These did not stop at Ghent, and the time allowed over the 57.4 miles between Brussels and Bruges was 46 min. westbound and 47 min. eastbound, representing average speeds of 74.9 and 73.3 m.p.h. respectively. These runs, the fastest ever scheduled with steam in Europe, were made with specially designed streamlined 4-4-2 locomotives. Nothing as fast as this is being attempted as yet with electric power.

Staff & Labour Matters

Railway Wages

Further discussions took place between representatives of the B.T.C. and of the N.U.R. on September 23 and 24 in connection with the wages structure for railway conciliation grades. Progress was made, and the leaders of the N.U.R. will now report the result of the discussions to their executive committee.

At the request of the A.S.L.E.F. a meeting of the Railway Staff National Council took place on September 24 to deal with the Society's claim, which it insisted should be dealt with through the machinery of negotiation in preference to further discussions with representatives of the Commission.

The constitution of the Railway Staff National Council is: eight representatives of B.T.C., four of the N.U.R., two of the A.S.L.E.F., and two of the T.S.S.A.

Official Statement on Council Meeting

The following statement was issued after the Council meeting:—

"A meeting of the Railway Staff National Council was held today at which the eligibility of the claim of the A.S.L.E.F. for submission through the higher stages of the machinery was discussed.

"As no agreement was reached by the Council, the A.S.L.E.F. announced that it intended to submit its wages claim to a meeting between the Railway Staff Conference and the N.U.R. and A.S.L.E.F. which will be held on Thursday next, September 30. The N.U.R. representatives announced that they required to give further consideration to their position in respect of the footplate grades."

WORK BEGINS AT CARLISLE CITADEL STATION.—Work has now started on the partial renewal and recovering of the roof and a new electric lighting installation at Carlisle Citadel Station, London Midland Region, which will cost £200,000. The present roof was constructed in 1878. It is expected that the present scheme will take at least two-and-a-half years to complete.

SHENFIELD - SOUTHEAST ELECTRIFICATION: ALTERED TRAIN SERVICES.—British Railways, Eastern Region, announce that in preparation for the higher speeds possible after electrification, work will shortly start on track improvements between Southend Victoria and Shenfield. In the ordinary course, a programme of track drainage would have been carried out during the next three or four years, but this is to be compressed into a much shorter period so that the actual work of electrification may not be delayed and electric services may not be interrupted after introduction. Much work will be done during the night hours, but some must be done by day, and certain alterations to passenger train services will be made from October 3. Some business trains to and from Liverpool Street in the peak periods will be retimed, and certain trains running against the main flow of traffic suspended during these periods and certain late evening trains discontinued temporarily. There will be a heavy concentration of work on Sundays, when the service will be entirely suspended between Shenfield and Rayleigh with a special train service between Rayleigh and Southend Victoria. Bus services will be run in place of most of the suspended trains.

Contracts & Tenders

The Netherlands Railways have placed an order with Werkspoor N.V. for 15 two-car and 30 four-car streamlined electric sets.

Baume et Merpent S.A. is completing at its Morlanwelz works an order for 30 passenger coaches of four different types for the State Railways of Thailand.

Ruhrstahl A.G., of Hattingen, Germany, has received from the Indian Railways an order for 100 metre-gauge wheel and axle sets for coaches and wagons.

Schindler Carriage & Wagon Co. Ltd., is completing at its Pratteln works an order for 100 covered four-wheel wagons of 30 tons capacity for the Swiss Federal Railways.

Waggonfabrik A.G., Rastatt, Germany, has received an order for four dining cars from the German Federal Railway. They are to be of the standard 86-ft. long type with the standard underframe and bogies as used on other types of 86-ft. stock.

S.A. Ing. Greco, of Reggio Emilia, has an order from the Italian State Railways for 11 four-wheel diesel-hydraulic locomotives of 260 b.h.p. for the Italian State Railways. The two-stroke engines, mechanical part of the drive, and the controls are being supplied to Greco by Klöckner-Humboldt-Deutz A.G., along with the Voith transmission.

The Swiss Federal Railways have placed orders for 12 more 6,000-h.p. single-phase electric locomotives of Co-Co type for the Gotthard line. These are to be generally similar to the two prototype locomotives which have been at work for over a year. The Swiss Locomotive & Machine Works is to build all the mechanical portions at its Winterthur works, and the electrical equipment has been divided between Brown Boveri, Schcheron and the Maschinenfabrik Oerlikon.

Klockner-Humboldt-Deutz A.G. has received from the Upper Congo-Great African Lakes Railways in Belgian Congo an order for two diesel-mechanical locomotives of 165 b.h.p. This is a repeat order of four locomotives already supplied. Deutz engines, Deutz gearboxes, and Voith-Sinclair fluid couplings are incorporated. This firm is also building for the B.A.O.R. six 225-b.h.p. four-wheel diesel-hydraulic shunting locomotives with Deutz two-stroke engines and Voith transmission.

British Railways, North Eastern Region, have placed contracts as under:—

Waygood-Otis Ltd., Newcastle-on-Tyne: repairs to and reconditioning of lift, Forth Bank Offices, Newcastle

Alfred Herbert Limited, Coventry: Herbert No. 9B combination turret lathe, York Wagon Works

Tenders for locomotive frames are invited by the High Commissioner for India. See Official Notices on page 392.

The Special Register Information Service of the Export Services Branch of the Board of Trade has issued a five-page circular, GEN. 1268c, dated September 23, which outlines the new procedure for tenders specified by the Egyptian Republic Railways and the Egyptian State Telegraphs & Telephones Administration. The

reference E.S.B./12341/54 should be quoted in correspondence with the Branch about the circular.

The Special Register Information Service, Export Services Branch, Board of Trade, reports a call for tenders for diesel-electric locomotives, by the State Railway of Thailand, as follows:—

Track gauge	Metre
Rail	24'8 kg./m. (50lb. per yd.)
Sleeper spacing	750 mm.
Diameter of driving wheel on tread	914 mm.
Height of centre of coupler above top of rail for M.C.B. coupler	850 mm.
Buffer height above top of rail:	
Normal	560 mm.
Maximum	578 mm. (for central combined buffing and drawgear coupler)
Minimum	534 mm. ditto.
Minimum radius of curvature open line	160 m.
Minimum radius of curvature in turnouts	156 m.
Widening of gauge on minimum curve of 160 m.	19'4 mm.
Continuous speed rating of locomotive	Not more than 12 km./hr.
Maximum elevation of the track above sea level	600 m.
Maximum temperature of free air	43°C.
Minimum temperature of free air	10°C.
Mean temperature of free air	27°C.
Maximum relative humidity	100 per cent
Mean relative humidity	74 per cent
Fuel tank capacity	3,300 litres

Tenders should reach the Stores Superintendent, State Railway of Thailand, Bangkok, by November 5. A copy of the tender documents (No. B.E. 2497), including specifications and conditions of tender, is available on loan to United Kingdom firms in order of receipt of application to the Branch, Lacon House, Theobalds Road, London, W.C.1.

The Special Register Information Service, Export Services Branch, Board of Trade, reports a call for tenders for manwood or sassafras wooden sleepers by the Stores Department of the South African Railways. The requirements are manwood or sassafras wooden sleepers for test, as follows:—

200 manwood or black manwood species:	
7 ft. × 10 in. × 5 in.	
200 sassafras or nees species: 7 ft. × 10 in. × 5 in.	

Tenders in sealed envelopes, clearly endorsed "Tender No. A.8246: Manwood or Sassafras Wooden Sleepers for Test" in the left-hand corner, should be addressed to the Chief Stores Superintendent, P.O. Box 8617, Johannesburg. The closing date is October 21. A copy of the tender documents, including specifications and conditions of tender, may be borrowed by United Kingdom firms on application to the Branch, Lacon House, Theobalds Road, London, W.C.1.

The Director General of Supplies & Disposals, New Delhi, is inviting tenders for 200 wheels, chilled, cast-iron. Tenders are to be submitted to the Director General of Industries & Supplies, Shahjahan Road (Section SRI), New Delhi, quoting

reference SRIA/16746—E/1, and will be received up to 10 a.m. on October 13.

Forms of tender are only available for purchase in India from the Deputy Director General (Supplies), Directorate General of Supplies & Disposals, New Delhi; Director of Supplies & Disposals, Bombay or Calcutta; Deputy Director of Supplies & Disposals, Madras.

If the date for the receipt of tenders does not allow sufficient time for tenderers to obtain tender forms from India, they may submit their quotation to India in their own letter form or by telegram, so long as all essential particulars are given and provided they simultaneously apply for the tender forms and return them duly completed as quickly as possible on the basis of advance quotations already submitted.

The drawing is not available in this country and a copy is available from the officers mentioned above.

The Special Register Information Service, Export Services Branch, Board of Trade, reports a call for tenders for 65-ton diesel power breakdown cranes with match trucks, issued by the Ministry of Communication (Railway Division), Government of Pakistan. The requirements are:—

Description	No. required
Broad gauge (5 ft. 6 in.) crane, breakdown, self-propelling, diesel power, to lift 65 tons, maximum axle load in travelling order 16 tons, fitted with hand brake and piped for vacuum brake complete with match truck	Two
Equipment consisting of slings, etc.	Two sets

The crane shall be of the self-propelling type fitted with an under-carriage mounted on suitable bogies, the number and arrangement of the axles being dependent on the maximum axle load hereinafter specified. It shall be supplied complete with match truck. The crane shall be designed to lift a diesel locomotive of about 120 tons weight, i.e., that the weight on the main hook shall be 60 tons, plus the weight of the tackle, which, if assumed to be five tons, makes the total weight on the hook 65 tons.

Tenders should reach the Director General (Railways), Railway Division, Ministry of Communications, Room No. 302, 2nd Floor, Multi-Storeyed Building, Adj. Assembly Building, Kings Way, Karachi, by November 17.

A copy of the tender documents including specifications and conditions of tender may be inspected in Room 805 at the Export Services Branch, Lacon House, Theobalds Road, W.C.1, until October 3, after which date it will be available for loan to United Kingdom firms in order of receipt of application. Copies of tender documents may be purchased from the office of the Director General (Railways), Railway Division, Ministry of Communications, Room No. 342, 2nd Floor, Multi-Storeyed Building, Adj. Assembly Building, Kings Way, Karachi, on payment of Rs. 50/- a set.

The Special Register Information Service, Export Services Branch, Board of Trade, has been advised by the United Kingdom Trade Commissioner at Pretoria that the Union Tender & Supplies Board has begun to encourage tenderers to quote firm prices, while retaining its "sliding prices clauses." Form U.T.S.B.55. Thus, tenderers may quote firm prices or otherwise. Other things being equal, the tenderer quoting a firm price will be awarded the contract.

Notes and News

Draughtsman Required.—Applications are invited for the post of draughtsman having general mechanical engineering design experience and/or railway rolling stock experience. See Official Notices on page 392.

Vacancy for Mechanic.—Applications are invited for a mechanic between 25 and 30 years of age required by pneumatic tool manufacturer as a technical and service representative to travel and demonstrate pneumatic tools. See Official Notices on page 392.

Electrical Engineer/Assistant Electrical Engineer Required.—A vacancy exists for an electrical engineer/assistant electrical engineer, between 23 and 45 years of age, in the Railway Department of the Gold Coast local civil service, to assist in the operation of the electrical workshop at location and Takoradi. See Official Notices on page 392.

Accident on Central Railway, India.—At least 70 persons were killed and 29 injured on September 27 when a train of the Central Railway, India, fell into a river between Secunderabad and Kazipet, in Hyderabad. An iron bridge, weakened by floods, collapsed beneath the weight of the train. The train was composed of seven coaches and was carrying about 600 sleeping passengers. The line concerned is broad gauge and was formerly part of the Nizam's State Railway.

Glasgow Autumn Holiday Excursions.—In connection with the Glasgow Autumn holiday last weekend, many weekend, day, and evening excursions were arranged by British Railways Scottish Region. Destinations included Blackpool and Morecambe. Cheap days tickets were issued to Larne, Belfast, and Portrush via Stranraer, also to the Fife coast resorts, Fort William, Oban, North Berwick, Dumfries, Aberdeen, Grantown-on-Spey, Hawick, New-castle, and the Clyde Coast piers.

Junior Institution of Engineers.—The new headquarters of the Junior Institution of Engineers at Pepys House, 14 Rochester Row, London, S.W.1, officially opened on September 23, contains a lecture room fitted with a platform and demonstration bench. A projection box is to be installed for a sound cinema projector and lantern, and an epidiascope also is available. On this floor also are the general and Secretary's offices. The lower floor has a similar hall, probably to be used for social purposes, a kitchen, and lavatories. On the first floor is a library and lounge.

Record Sales for G.E.C.—The Chairman of the General Electric Co. Ltd., Sir Harry Railing, said in his speech at the annual general meeting on September 23 that sales were a new record both in capital and consumer goods at home and abroad. But for this it would have been impossible to absorb the wage advances in the engineering industry. The directors had recommended an increased dividend on the ordinary stock of 12½ per cent for the year, against 11½ per cent last year. They had no fear about the home market. In the export market they must meet the competition of countries whose industries bore a lower rate of taxation and whose labour rates were much below their own—in Germany, for instance, in the engineer-

ing industry, some 25 per cent. These differences must ultimately level themselves out, or it would be increasingly hard to maintain even their present share of the world's markets. Every 5 per cent advance in wages might mean a 4 per cent increase in cost of the product. They must concentrate on further reduction of taxation and free additional spending power and manpower. The report was adopted.

Mond Nickel at the Engineering Industries Association Display.—The Mond Nickel Co. Ltd. stand (No. 18) at the Engineering Industries Association, London Regional Display at the New Horticultural Hall on October 12–14, will offer advice and assistance to the smaller engineering firms in the selection of suitable materials for specific applications in industry. Publications on a range of subjects will be displayed for perusal by those interested in nickel and its alloys.

Railway Benevolent Institution.—At its meeting on September 22 the board of the Railway Benevolent Institution granted annuities to six widows and eight members involving an additional liability of £239 4s. per annum; 104 gratuities were also granted amounting to £936 to meet cases of immediate necessity. Grants made from the Casualty Fund during August amounted to £503 15s. The address of the Institution has been changed to 30, Tavistock Square, London, W.C.1.

Record Passenger Movement by C.I.E.—The largest transport operation ever undertaken by Coras Iompair Eireann was carried out on September 19, when 30,000 members of the Pioneer Total Abstinence Association visited the shrine at Knock, Co. Mayo. C.I.E. carried 12,000 pilgrims by rail in 22 special trains and a further 8,000 in 205 buses. In addition, a continuous shuttle bus service ran between Claremorris Station and Knock. The arrangements worked smoothly, and the advantages of diesel trains were well demonstrated at Claremorris, where a minimum amount of train marshalling and shunting was needed.

Stream-Line Filters Limited Results.—Mr. C. S. Garland, Chairman of Stream-Line Filters Limited, stated at the annual meeting on September 25, that while output remains high, the volume of current orders from shipbuilders, engine makers and some of the more important overseas customers is less than the present rate of delivery to those markets, and increased turnover is to some extent at the expense of the balance of forward orders. A lower rate of profit will, however, be counterbalanced to some extent by the demise of E.P.L., and though it is clear, Mr. Garland added, that 1954 profits will be less, results so far indicate that a reasonable dividend can be paid.

Road Haulage Disposal List.—The British Transport Commission and the Road Haulage Disposal Board announce that List No. 8, the next list of transport units to be offered for public tender, will be advertised on November 3, and not on October 13 as previously announced. The date has been postponed so that as large a number of units and vehicles as possible can be included in the list, which will contain between 2,500 and 3,000 vehicles. The great majority of the vehicles will be in units of one to four vehicles, and will be vehicles which have been offered already in earlier lists. Vehicles being re-offered

will be re-grouped into new units, mostly of fewer vehicles; it is thought that this may make them more attractive to tenderers.

Jugoslav-Roumanian Rail Connection.—Railway traffic is being restored today between Yugoslavia and Roumania after a lapse of four years.

Reconstruction of Hedjaz Railway.—The conference of technicians from Jordan, Syria, and Saudi Arabia to discuss the reconstruction of the Hedjaz Railway, referred to in our September 10 issue, will be held on October 9 in Damascus.

Nyasaland Railways Limited Annual Meeting.—The report and accounts of Nyasaland Railways Limited were adopted at the annual meeting on September 24, at which Mr. W. M. Codrington, Chairman & Managing Director, presided. The report was the subject of an editorial article in our September 10 issue.

International Passenger Timetable Conference.—At the invitation of the Hungarian State Railways, the European Timetable & Through Carriage Conference will be held in Budapest on October 6–16. Mr. L. H. K. Neil, Continental Traffic Manager, Eastern Region, and Mr. R. E. Sinfield, Continental Superintendent, Southern Region, with officials of their departments, will represent British Railways.

Japanese Train Ferry Sunk in Typhoon.—The Japanese National Railways 4,300-ton train ferry, the *Toya Maru*, is reported to have capsized with 45 railway vehicles on board near Hakodate, during the typhoon on September 26. The vessel is stated to have been conveying over 1,200 passengers, of whom at least 900 lost their lives. The ferry service concerned is that between Aomori, on the island of Honshu, and Hakodate, on Hokkaido. The typhoon did great damage to the railways, particularly in Hokkaido.

Effects of Street Congestion on Bus Services.—A general ban on street parking in the inner area of London, which would make the bus services better and cheaper to run, would save users of public transport services at least £500,000 a year, stated Mr. A. B. B. Valentine, Member of the British Transport Commission, in London on Saturday. He was speaking at the 25th anniversary dinner of the Omnibus Society. He added that in cities throughout the world the omnibus was being increasingly prevented from giving satisfactory service mainly because of the obstructions to its passage caused by the parking of other vehicles. Today this major cause of traffic congestion in London prevented the omnibus from being an efficient servant of the public.

Heavy Loads by Road.—Speaking at the annual meeting of the coastal liner section of the Chamber of Shipping in London last week, the Chairman, Mr. J. N. Burrell, said they were now beginning to see the effect of the change in national transport policy. The nationalised road haulage undertaking was slowly disintegrating, and instead of two strong competitors there was a plethora of small transport undertakings who, at this stage, seemed more anxious to obtain tonnage than to obtain economic rates. A "free-for-all" with no regulation was not in the interests either of the country, the traders, or those engaged in transport. A fair example of this in one

aspect only was the carriage of unwieldy and heavy loads by road. This traffic, even in the interests of other road users, should quite clearly be routed by sea.

Gallery under English Channel.—The French Ministry of Transport has announced that the British and French Governments were studying the question of constructing a gallery under the Channel to carry telephone and electric cables. This gallery would be designed to permit its incorporation at a later date with a cross-Channel tunnel for traffic. No definite plan has, however, yet been decided upon.

Inter-Regional Small Bore Shoot.—The British Railways Staff Association annual inter-Regional small bore shooting competition, held at Chesterfield on September 21, resulted in a win for the North Eastern Region team, whose score was 1,573 points out of a possible 1,600. Second were the Eastern Region with 1,567 points. The Staff Association Shield was presented to the captain of the winning team, Mr. H. W. Johnson, by Mr. C. S. MacLeod, Regional Staff Officer, Eastern Region, with plaques for the individual marksmen.

Vickers Limited Allotments.—Acceptances of provisional allotment letters covering 2,892,003 shares have been received by Vickers Limited in connection with the "rights" issue of ordinary shares, on a one-for-eight basis, at 27s. 6d. a £1 share. For the balance of 186,868 shares, 14,949 applications were received for a total of 4,900,793 shares. The allotment is being based as follows: Applications up to 12 shares in full; 13 to 500 shares, 12 shares; over 500 shares, 18 shares to each applicant. Allotment letters were posted on September 22.

Sales of Transport Units.—The Road Haulage Disposal Board and the British Transport Commission announced on September 21 that, of transport units without premises offered in List No. 7, advertised on July 28, the highest tenders were accepted for 572 general units, comprising 1,256 vehicles. All tenders were rejected for 108 units (384 vehicles) and no decision had been reached on 153 units (431 vehicles). Of contract hire units, the highest tender was accepted for 7 (17 vehicles), all tenders were rejected for 2 units (14 vehicles), and no decision had been reached on 8 units (156 vehicles). All units attracted offers.

Re-railment by Goods Guard Saves Heavy Delays.—At Marylebone Station on September 22, Goods Guard F. W. Keeble, of Ipswich, was presented with a meritorious conduct certificate and cheque by Mr. E. W. Rostern, Operating Superintendent, British Railways Eastern and North Eastern Regions. Earlier this year, whilst a goods train was being shunted at Tivets-hall, four wagons were derailed, both up and down main lines being blocked. Keeble decided to drag the wagons clear of the up main line. After advising the signalman of his intention he instructed the driver to go forward very steadily and to keep going until signalled to stop. By keeping his hand brake hard on and the couplings tight the first derailed wagon started to mount the rails at the points as the train was being drawn forward; seeing this, Keeble kept the train moving and all four wagons took the same path, re-rail themselves on the down main line. Had the wheel flanges fallen the other side of

the rails, much packing would have been required. Nevertheless, the re-railment enabled the up main line to be cleared, thus saving at least two hours' blockage of both main lines, and the accident van which was ordered did not need to leave the depot at Norwich.

Clothing Burnt to Warn Drivers of Trains.—A soldier, who injured himself when he fell across the track near Crowthorne, on the Southern Region, Guildford to Reading line, and found himself unable to move last Saturday night, is reported to have set fire to his tunic to warn drivers of trains. The flames were not seen in time to stop a train from striking him a glancing blow which knocked him clear of the track, injuring his hand.

Sailing Tickets for Anglo-Irish Services at Christmas.—British Railways, London Midland Region, announce that in the interests of passengers' comfort, travel to Ireland is to be regulated on certain days before Christmas by the issue of sailing tickets. The routes affected are: Fishguard—Rosslare, Fishguard—Waterford, Heysham—Belfast, Holyhead—Dun Laoghaire, Liverpool—Belfast, and Liverpool—Dublin.

Tractor Driver to Pay Locomotive Repair Costs.—At Worcester County Court recently, damages of £28 19s. 1d., the cost of repairing a railway engine which was in collision with a tractor and trailer at an accommodation crossing, were awarded to the British Transport Commission against the tractor owner, who was also ordered to pay costs. The tractor was on the crossing when one of the gates was blown shut by the high wind. The driver left his seat to open the gate, but when he returned to the tractor the wheels slipped and the vehicle would not move. A train, travelling at some 50 m.p.h., which had no chance to stop, struck the tractor.

Wagon Repairs Limited.—Sir Leslie Boyce, Chairman, presided at the annual general meeting of Wagon Repairs Limited in Birmingham on September 23. In his statement circulated with the report and accounts, showing that the profit of the group for the year ended March 31, 1954, he said that the dividends paid to the preference and stockholders represented a return of about 7½ per cent less tax on the capital and reserves as at March 31 last. Because of an enforced reduction in respect of their charges, the margin of profit on work done on behalf of the B.T.C. was very low. It produced no commensurate reward for the endeavours of all concerned in providing a repairing service of very real value to British Railways.

Mid-week Matinee Tickets in the North Eastern Region.—From October 5 British Railways, North Eastern Region, are to introduce new mid-week period tickets from principal stations in the North-East to Derby and Nottingham. Passengers may travel outward on a Tuesday, Wednesday, or Thursday by any ordinary train, and the tickets enable them to return on a Tuesday, Wednesday or Thursday within 17 days of the outward journey. Mid-week bookings already in operation to Barnsley, Chesterfield, Nottingham, and Sheffield have proved popular, as the mid-week "period" return tickets, introduced experimentally to attract additional traffic at off-peak periods, show a considerable reduction over the ordinary return fare. An

example of a mid-week fare is Newcastle to Nottingham, 34s., compared with 48s. 2d. ordinary third class return.

Mond Nickel Co. Ltd.—The Mond Nickel Co. Ltd., on behalf of its parent company the International Nickel Company of Canada Limited, announces, that as a result of negotiations between Associated Electrical Industries Limited, Mond & Birlec Limited, the sale by Mond of its wholly-owned subsidiary Birlec to A.E.I. has been agreed. Birlec will operate as an individual company within the A.E.I. Group. Mr. George P. Tinker will continue as Managing Director, and Mr. T. G. Tanner and Mr. J. H. Crossley as executive directors.

Bala-Blaenau Festiniog Branch.—A correspondent points out, in reference to the item "Miles Away" in The Scrap Heap in our issue of September 24, that the Bala Junction to Blaenau Festiniog branch had no connection with the Cambrian Railways. The portion on which Maentwrog Road Station stands was built by the Bala & Festiniog Railway. It was worked by the G.W.R. from its opening in 1882, and amalgamated with that company in 1910.

Station Gardens Competition, North Eastern Region.—Riding Mill Station, North Eastern Region, has gained a special class prize for the fourth successive year in the competition for best-kept gardens in the Region. Ferriby, Ormesby, and Stocksfield also won special class prizes, the highest award in the competition. Thirty-one stations have received first class prizes, forty-five second class, eighty-four third class, and fifteen were awarded certificates of commendation.

Superheater Co. Ltd. Dividends.—On the ordinary capital increased by a 50 per cent scrip issue the directors of the Superheater Co. Ltd. have declared an interim dividend of 6d. a 5s. share in respect of 1954 (the same as for 1953 but on the old capital), payable on October 20, to holders registered on October 2. In announcing this the board states that for the eight months ended August 31, output shows an increase over last year, but so far the volume of new orders has not kept pace with this increased production.

Broom & Wade Limited Compressed Air Equipment.—Portable compressors of 60-500 cu. ft. F.A.D. at 100 lb. p.s.i.; a portable spray painting unit, compressor displacement 20 C.F.M., working pressure 20-80 lb. p.s.i., powered by a 5-h.p. petrol engine; and stationery compressors up to 790 cu. ft. F.A.D., including the new Broom & Wade Lightweight twin-cylinder air-cooled compressor, will be among the exhibits of Broom & Wade Limited at the Public Works Congress & Exhibition at Olympia, London, W.14, on November 15-20.

Gloucester Railway Carriage & Wagon Co. Ltd. Results.—A final dividend of 6½ per cent, the same as for the preceding year, is recommended by the directors of the Gloucester Railway Carriage & Wagon Co. Ltd., making 11½ per cent for the year to May 31, 1954 (against 10 per cent for the previous year). Group net profits were £128,841 (£125,521), after providing for tax of £150,944 (£146,600) and past years tax credit of £22,543 (£8,251). Profits attributable to the parent company were £120,347 (£107,297). The general reserve again receives £50,000. The balance forward is £44,220 (£36,796).

Railway Stock Market

Encouraging trade reports have been largely responsible for a further advance in many industrial shares, some of which reached new high record levels. Small irregular movements featured British Funds, and once again business passing in foreign and overseas rails was small and scarcely adequate to test prices. Activity generally in markets has been on a substantial scale despite the large amount of investment money being held back for the offer of shares in John Summers and for other new issues. Sentiment was helped by many more dividend increases from well-known companies and also by news of free scrip issues. With the main interest still centred on industrial shares, there has been little tendency for more attention to be given to foreign rails.

Antofagasta ordinary and preference stocks were $7\frac{1}{2}$ and $44\frac{1}{2}$ respectively. Nitrate Rails shares remained more active again and have strengthened to 20s. 3d. Mexican Central "A" debentures were 72. San Paulo units changed hands around 3s. 6d., while elsewhere. United of Havana second income stock was $35\frac{1}{2}$ and the consolidated stock $5\frac{1}{2}$.

Chilian Northern 5 per cent. debentures were $29\frac{1}{2}$, while Costa Rica ordinary stock was 11 and the 6 per cent first debentures $67\frac{1}{2}$.

After their recent outburst of activity, Dorada Railway ordinary stock quietened down at $80\frac{1}{2}$; the 6 per cent first debentures were quoted at $92\frac{1}{2}$. Guayaquil & Quito 5 per cent debentures changed hands at $57\frac{1}{2}$. Taltal Railway shares were 13s. 6d. and Brazil Railway bonds remained at 8.

Canadian Pacific have been wanted, partly on yield considerations and partly on talk of possibilities of a moderate increase in the dividend. The price strengthened to $\$49\frac{1}{2}$, while the 4 per cent preference stock remained steady at $\$68\frac{1}{2}$ with the 4 per cent debentures $\$92$. Elsewhere, White Pass no par value shares have been quiet at $\$29\frac{1}{2}$; the convertible debentures kept at $\$105$ and the $5\frac{1}{2}$ per cent loan stock was $\$133$.

Business around 24 has been recorded in Midland of Western Australia, while the $4\frac{1}{2}$ per cent first debentures were $92\frac{1}{2}$ and the income debentures 42. Emu Bay 5 per cent and $4\frac{1}{2}$ per cent debentures were $44\frac{1}{2}$ and $62\frac{1}{2}$ respectively.

In other directions, business around 5s. 3d. was recorded in Nyasaland Railways shares, while the $3\frac{1}{2}$ per cent debentures were $79\frac{1}{2}$.

Among Indian stocks, Barsi remained at $92\frac{1}{2}$, while West of Indian Portuguese 5 per cent debentures have been dealt in at $86\frac{1}{2}$.

There have been further gains among road transport shares, which attracted attention on the possibility of somewhat higher dividends. Southdown strengthened to 36s. 3d., Lancashire Transport to 62s., while West Riding have been firm at 35s. 6d. Elsewhere, Aldershot & District were 30s., Trent Motor Traction 38s. 9d., Ribble Motor 37s. 6d., Northern General 28s. and East Kent 28s. 9d. B.E.T. 5s. "A" deferred stock reached the new high record of 64s. 6d.

News of the next steel issue attracted considerable attention. It is assured of oversubscription because of applications by the big finance houses backing the steel issues. The yield of not far short of $7\frac{1}{2}$ per cent at the issue price of 24s. 6d. is certainly attractive and there seem good prospects of the 9 per cent dividend rate

being maintained in future. In some quarters a small premium in the shares is being suggested when dealings start, though this is not generally expected. Nevertheless, it would seem that dealings should start around the issue price. The possibility of re-nationalisation of steel should there be a future change of Government explains why steel shares do not attract widespread attention. The political risk apart, steel shares should appeal to investors who require a good yield. There is a growing assumption that even in the event of future re-nationalisation, the take-over terms could not be below the very modest prices the shares are being offered to investors. Engineering shares showed small irregular movements, though T. W. Ward have been steadier at 54s. Guest Keen were 62s. 9d., Ruston & Hornsby 52s. 9d., and Vickers 38s. 6d. x d.

Among shares of locomotive builders and engineers, Beyer Peacock were 44s. 9d., Charles Roberts 5s. shares 8s. 9d., and Birmingham Carriage 26s. 10d. Hurst Nelson declined sharply to 39s. 9d. at Glasgow. North British Locomotive were 15s. 3d., Vulcan Foundry 29s. 9d., Gloucester Wagon 10s. shares 19s. 6d. and Wagon Repairs 5s. shares 13s. 6d. Central Wagon 10s. shares have changed hands around 16s. G. D. Peters were 26s. 10d.

Forthcoming Meetings

Until end of year.—"Popular Carriage" Exhibition (Two centuries of carriage design for road and rail) in the Shareholders' Meeting Room, Euston Station, London, N.W.1. Weekdays 10 a.m. to 7 p.m.; Sundays 2 to 7 p.m.

October 5 (Tue.).—Permanent Way Institution, Leeds & Bradford Section, in the British Railways Social & Recreational Club, Ellis Court, Leeds City North Station, at 7 p.m. Paper on "Some notes, mainly historical, on the Liverpool district," by Mr. G. F. Kent, District Engineer, Liverpool, British Railways, London Midland Region.

October 6 (Wed.).—British Railways, Southern Region, Lecture & Debating Society, in the Chapter House, St. Thomas's Street, London Bridge, S.E.1, at 5.45 for 6 p.m. Opening address by Sir John Elliott.

October 7 (Thu.).—Electric Railway Society, at Fred Tallant Hall, 153, Drummond Street, London, N.W.1, at 7.15 p.m. Paper on "A Swiss miscellany," illustrated by lantern slides, by Mr. R. K. Kirkland.

October 7 (Thu.).—British Railways Western Region, London Lecture & Debating Society, in the Headquarters Staff Dining Club, Bishop's Bridge Road, Paddington, W.2, at 5.45 p.m. Talk on "Thoughts on thinking," by Mr. C. K. Bird, Chief Regional Manager, British Railways, Eastern Region.

October 9 (Sat.).—Permanent Way Institution, East Anglia Section, at Norwich, at 2.15 p.m. Paper on "Single line Working," by Mr. C. Parkinson.

October 10 (Sun.).—Light Railway Transport League, From Clapham Junction at 10.30 a.m. Diesel railcar tour.

October 11 (Mon.).—Institute of Transport, at 66, Portland Place, London, W.1, at 5.45 p.m. Presidential address by Sir Gilmour Jenkins.

October 12 (Tue.) to October 15 (Fri.).—Road Haulage Association, Annual Conference at Weston-super-Mare.

OFFICIAL NOTICES

The engagement of persons answering Situations Vacant advertisements must be made through a Local Office of the Ministry of Labour or a Scheduled Employment Agency if the applicant is a man aged 18-64 inclusive or a woman aged 18-59 inclusive unless he or she, or the employment, is exempted from the provisions of the Notification of Vacancies Order, 1952.

QUANTITY SURVEYOR/ESTIMATOR required. Permanent position with accommodation offered to suitably qualified man. Apply to The Eagle Construction Co., Ltd., Scunthorpe, Lincs.

DRAUGHTSMEN required having general mechanical engineering design experience and/or Railway Rolling Stock experience. Situation Survey, Pension Scheme. Apply in writing giving age, training and experience to—Andre Rubber Co. Ltd., Kingston-by-Pass, Surbiton, Surrey.

MECHANIC 25-30 years of age is required by Pneumatic Tool manufacturer as a technical and service representative to travel and demonstrate Pneumatic Tools. No previous experience required as salesman but railway mechanics familiar with this type of equipment would be employed. Apply giving full particulars to: Secretary, Armstrong Whitworth & Co. (Pneumatic Tools) Ltd., 40, Broadway, London, S.W.1.

ACCOUNTANT, 31 Licentiate A.I.A., senior admin. appointments held on overseas railways. Extensive knowledge of all branches of transport accounting and auditing. Excellent refs. Details of previous apps. will be given to Directors of S. American or Far Eastern Railways having a suitable vacancy on their staff. Please write Box 363, The Railway Gazette, 33, Tothill Street, London, S.W.1.

GOLD COAST LOCAL CIVIL SERVICE. Electrical Engineer/Assistant Electrical Engineer, Gold Coast Railway. A vacancy exists for an Electrical Engineer/Assistant Electrical Engineer, Railway Department of the Gold Coast Local Civil Service. Duties are to assist in the operation of the Electrical Workshop at Location and Takoradi. Appointment is on contract for 2 tours in the salary range £1,030-£2,020 per annum, plus gratuity of £37 10s. for each completed 3 months satisfactory service. Free first class passages are provided for the officer, his wife, and up to 3 children under 13 years of age. Government quarters are provided at a rental of £60.00 per annum, and leave is granted at the rate of 7 days for each completed month of resident service after a tour of 18-24 months. Candidates between 23 and 45 years of age must have passed Sections A and B of the examination for A.M.I.Mech.E. or A.M.I.E.E. or hold an engineering degree or diploma granting exemption from Sections A and B of the Institution's examination and have had 2 years' subsequent practical experience. They should have had experience in Workshop and Machine practice, and a knowledge of Electrical and Mechanical Equipment of all types of cranes. They must have served an apprenticeship or served as a graduate student with a reputable firm combining both Mechanical and Electrical Training. In addition they should have knowledge of low tension cable networks, distribution systems and their maintenance and they must be capable of controlling subordinate staff. Reference given to candidates with service in R.E.M.E., R.E., or R.A. Apply in writing to the Director of Recruitment, Colonial Office, Great Smith Street, London, S.W.1, giving briefly age, qualifications and experience. Mention the reference number (BCD 110/13/07/D15).

RAILWAY MATERIAL. Plain Sleepers, Chaired Sleepers. Rails of all Sections. Crossing Timbers. We undertake the supply and laying of all classes of siding installations.—The Railroad Plant Supplies Co. Ltd., 13 Waterloo Road, Wolverhampton. Telephone No. Wolverhampton 23617.

THE HIGH COMMISSIONER FOR INDIA invites tenders for the supply of 24 (12 Nos. RH, 12 Nos. LH) Frames for Engines, "P" Class, Machined and finished, To E.X.B. and N.W. RLY. C.E.'s Drs. No. 1695/64 and 1695/65. Forms of tender may be obtained from the Director General, India Store Department, 32/44, Edgware Road, London, W.2, on or after October 1, 1954, at a fee of 10s. which is not returnable. If payment is made by cheque, it should please be made payable to "High Commissioner for India." Tenders are to be delivered by 2 p.m. on Friday October 29, 1954. Please quote reference No. 194/54/DH/RLY.3.

RAILWAY SIGNALLING AND COMMUNICATIONS INSTALLATION AND MAINTENANCE. A practical guide, especially intended to help Signal Inspectors, Installers, Fitters, Linemen, Draughtsmen, and all concerned with installing and maintaining Signal, Telegraph, and Telephone Equipment. 416 pp. Many illustrations. Cloth. 8s. By post 8s. 6d. The Railway Gazette, 33, Tothill Street, London, S.W.1.

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